

TEAC[®]

A-4010GSL

STEREO TAPE DECK
SERVICE MANUAL



TEAC CORPORATION

SALES OFFICE: SHINJUKU BUILDING
1-8-1, NISHI-SHINJUKU, SHINJUKU, TOKYO
TEAC HONGKONG LIMITED ROOM NO. 1105
MAIN OFFICE: MELBOURNE PLAZA, 33 QUEEN'S ROAD C.
HONG KONG

U.S. DISTRIBUTOR: TEAC CORPORATION OF AMERICA
7733 TELEGRAPH ROAD
MONTEBELLO, CALIFORNIA 90640
U.S.A.
EUROPEAN DISTRIBUTOR: TEAC EUROPE N.B.
KABELWEG 45-47, AMSTERDAM-W. 2,
HOLLAND

SCOPE

This service manual provides adjustment and alignment procedures, schematic diagram and parts replacement information and the proper procedures for obtaining necessary repair parts.

If adjustments or repair procedures are not clear or seem difficult to accomplish or should you desire more detailed technical information, please contact your nearest TEAC dealer, TEAC Corporation or affiliated corporations, address's of which are printed in this manual.

TABLE OF CONTENTS

	SL & GSL FUNCTIONAL-COMPARISON CHART
1	SERVICE DATA
2	TEST EQUIPMENT
3	PARTIAL DISASSEMBLY
4	HEADS ALIGNMENT -MECHANICAL-
5	MEASUREMENT AND ADJUSTMENT -MECHANICAL-
6	MEASUREMENT AND ADJUSTMENT -ELECTRICAL-
7	PREVENTIVE MAINTENANCE
8	TROUBLE SHOOTING
9	WARRANTY AND SHIPPING INSTRUCTIONS
	EXPLODED VIEW AND PARTS LIST
	PRINTED CIRCUIT BOARD AND PARTS LIST
	SCHEMATIC DIAGRAM
	MANUAL CHANGE SHEET

GENERAL DESCRIPTION

The TEAC A-4010GSL is a two speed, four heads (Forward; erase, record, playback. Reverse; playback), three motors, solenoid operated, quarter-track stereo open reel tape deck with automatic reversing during playback. The A-4010GSL is also designed for LOW NOISE/HIGH OUTPUT tapes.

The TEAC A-4010GSL is a modernized version of the A-4010SL. The electronics section and deck mechanism are highly similar to the preceding model. Primary differences are shown below.

A-4010SL AND A-4010GSL FUNCTIONAL COMPARISON CHART		
	A-4010SL	A-4010GSL
Quick Lock Reel Tabs	N/A	A
Reel Height Adjuster	N/A	A
TAPE TENSION Selector	A	N/A
PAUSE Control Switch	N/A	A
Timer Adapter	N/A	A
Remote Control	RC-401	RC-403
VU Meter	Single scale	Double scale
Reels	Permalloy	Ferrite
NOTE		
RC-401	Reverse, forward, play, fast forward, rewind, stop.	
RC-403	Reverse, forward, play, fast forward, rewind, stop and record.	
A	Applicable	
N/A	Not applicable	

1 SERVICE DATA

MECHANICAL

Heads: Four track 2 channel stereophonic.
Erase,
1.8k Ω /100kHz, erase current approx. 30mA
Record,
100 Ω /1kHz, bias current approx. 2mA
Playback,
3k Ω /1kHz -53dB

Tape Width: Standard 1/4inch tape

Tape Speed: 3-3/4ips and 7-1/2ips ($\pm 1.0\%$)

Motors: 4/8-pole dual speed hysteresis synchronous motor for capstan drive.
6-pole eddy current motors for reel drive.

Wow and Flutter: 0.07% at 7-1/2ips.
0.09% at 3-3/4ips.
Wow and flutter measured according to weighted NAB standard using TEAC flutter free tape.

Fast Winding Time: Approx. 100 second or less for 1,200 feet.

Operating Position: Horizontal or vertical.

Power Requirements: 100/117/200/220 or 100/117/200/240V AC
(US Model, 117V 60Hz only) 50/60Hz 110W max.

Weight: 20.5kg (45.2 lbs)

ELECTRICAL

Transistors: 2SC732(BL) $\times 8$ 2SA494(Y) $\times 2$
2SC733(Y) $\times 12$ 2SC971(Y) $\times 2$

Diodes: S1B01-06 $\times 12$
S1B02-01 $\times 1$

Frequency Response: Refer to frequency response limit

Equalization: NAB equalization
7-1/2ips 3,180 μ sec. + 50 μ sec.
3-3/4ips 3,180 μ sec. + 90 μ sec.

Minimum Input: MIC: Input impedance 30k Ω
70dB/600 Ω
LINE: -18dB/100k Ω

Maximum Output:	LINE: Approx. -2dB/10k Ω or more HEADPHONE: -24dB/8 Ω
Bias Frequency:	100kHz push-pull oscillator
Signal to Noise Ratio:	50dB or more, peak record level to unweighted noise
Cross Talk Rejection:	40dB channel to channel at 1kHz 35dB adjacent track at 100Hz
Erase Efficiency:	70dB or more at 7-1/2ips

These specifications are indispensable information and are required to service the equipment properly. They may differ slightly from those printed in the advertising brochures or the operation manual.

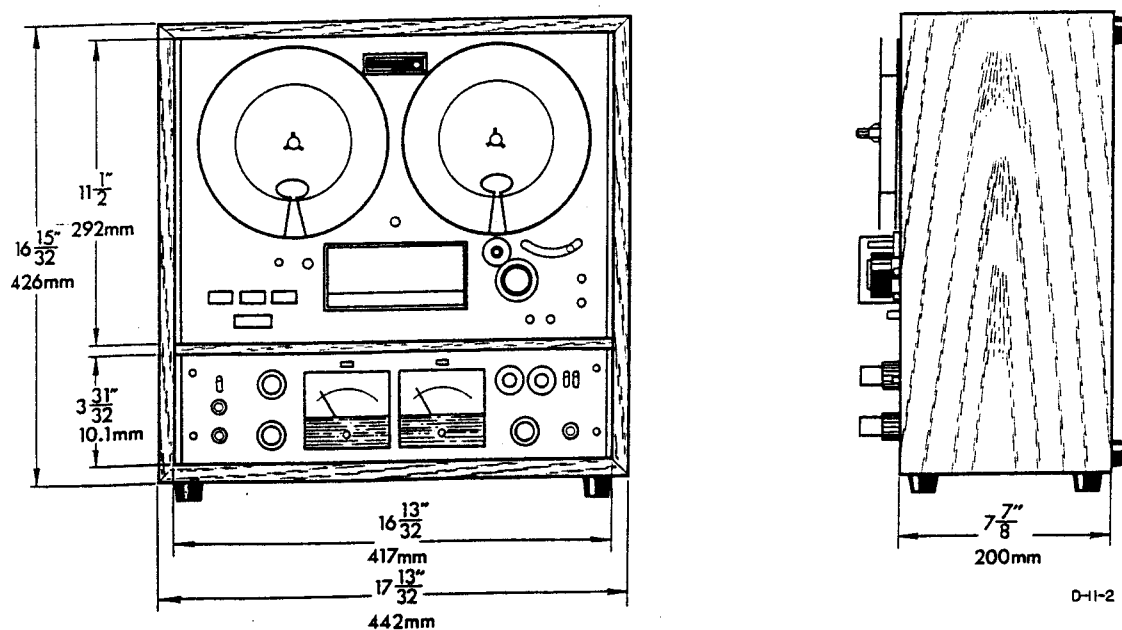


Fig. 1-1 Dimensions

2 TEST EQUIPMENT

For proper adjustment and measurement,
it is recommended that the following
test equipment be available:

FOR MECHANICAL MEASUREMENT

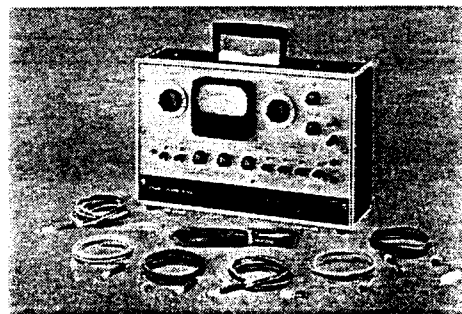
SPRING SCALE:	0~4 kilo-grams (0~8 lbs) #5086025000 0~300 grams (0~10 oz) #5086026000
TEST TAPE:	TEAC YTT-2003 (7-1/2ips) TEAC YTT-2002 (3-3/4ips)
FLUTTER METER:	Meguro Model MK665B (preferred) or Sentinel FL-3D-1
DIGITAL FREQ. COUNTER:	Capable of 0 to 5kHz indication
TOOLS:	General, 2mm nut driver #5086014000 Hex head, Allen wrench #5086021000

FOR ELECTRICAL MEASUREMENT

TEST TAPE:	TEAC YTT-1003 for 7-1/2ips TEAC YTT-1002 for 3-3/4ips SCOTCH 203 and 150 for recording test
EMPTY REEL:	TEAC RE-702 (2" hub) TEAC RE-701 (4" hub)
TEST SET:	TEAC M-826A test set
BAND PASS FILTER:	TEAC M-206A (1kHz)
AC/DC VTVM:	General purpose
RESISTOR:	Non inductive type 8 Ω /1W
OSCILLOSCOPE:	General purpose

NOTE: Use of the TEAC M-826A test set is recommended. This set incorporates a LEVEL METER, Audio Oscillator, Channel Selecting Switch, Variable Attenuator, Monitor Speaker and Cables.

TEAC M-826A measures the RMS value of the Voltage (0 dB=0.775V). Characteristics of this test set are similar to the standard VU-meter.



TEAC Test Set (M-826A)

3 PARTIAL DISASSEMBLY

TAPE TRANSPORT REMOVAL (WITH FRONT PANEL INSTALLED)

- Lay the unit face down on a soft mat.
- With rear cover removed, loosen and remove three screws at rear sides of chassis.
- Carefully slide transport from wooden case.

AMPLIFIER REMOVAL

- Remove four screws from amplifier front panel.
- Slide amplifier forward, remove four screws from amplifier cover, remove cover.
- Disconnect the cables connecting the tape transport and amplifier.

NOTE: Edge connectors are held in PC board by two retaining nuts.

- To reinstall the amplifier, reverse the procedure, be sure to reconnect the cables.

FACE PLATE REMOVAL

- Place the unit in horizontal position.
- Pull off the pinch roller and unscrew capstan dust cap.
- Remove head assembly cover after removing mounting screw on top of cover.
- Remove retaining screw on left tension arm and lift tension arm upward.
- Loosen and remove the reel height adjustment screw in each reel turntable.
- Lift off the reel tables.
- Remove 8 small Phillips screws from the front panel (1 at each corner, 1 above and below each reel motor). Front panel may now be removed.
- Reverse the procedure for reassembly.

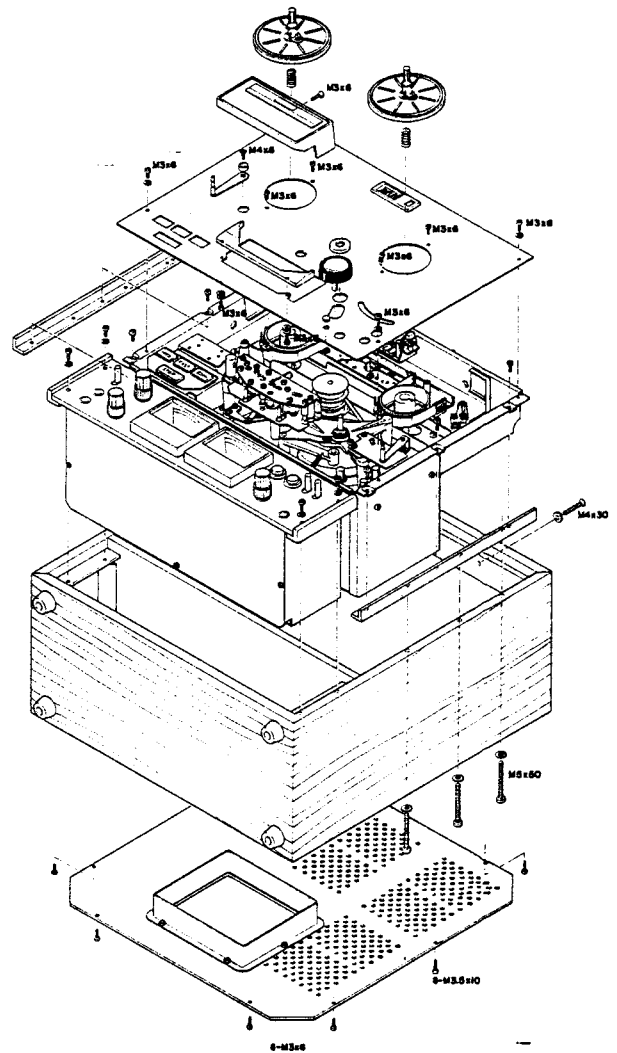


Fig. 3-1 Unit Disassembly

REEL HEIGHT ADJUSTMENT

NOTE: Reel height adjustment is required only if a motor has been replaced or when the tape rubs excessively against the reel flanges.

Load unit with tape (standardized and start the tape. Adjust by turning the screw in the reel table until the tape does not rub against the reel flanges.

REEL TABLE ASSY REPLACEMENT

- Remove reel table by loosening the reel height adjustment screw.
- Reel table will slide off upward.
- Remove the two allen screws at lower end of brake drum.
- Pull out the brake drum in the direction of the motor shaft.
- Reverse the procedure for reassembly.
- Position the brake drum from the edge of the brake band as shown.

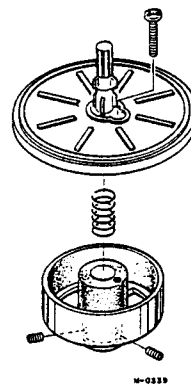
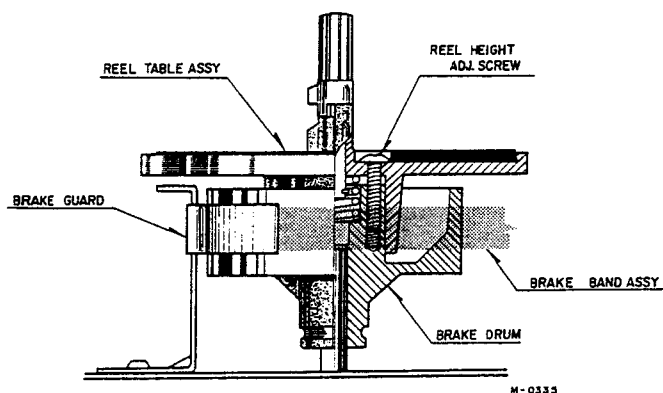


Fig. 3-2 Reel Table Assy Replacement

CAPSTAN MOTOR REPLACEMENT

- Slide out the capstan belt.
- Loosen the two set screws on pulley and lift off pulley.
- Unsolder the six wires connecting the capstan motor.
- Remove four screws located around capstan shaft on front panel, taking care that the motor does not drop onto other components.
- Reinstall by reversing above procedure.
- Adjust capstan belt tension by loosening the four screws on the motor, position motor for proper belt tension, then re-tighten screws.
- Apply a drop of LOCTITE on the screws when adjustment is complete.

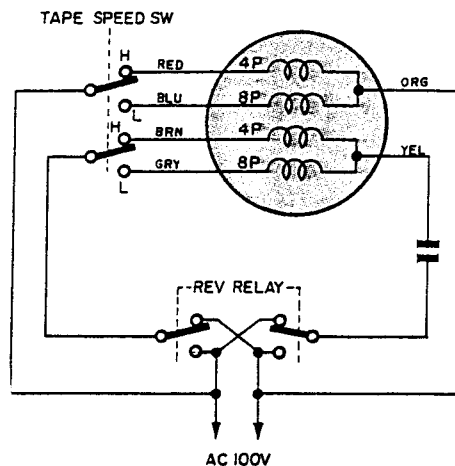


Fig. 3-3 Capstan Motor Wiring

CAPSTAN ASSEMBLY

- Remove rear cover, remove capstan belt.
- Remove the four screws holding capstan base(casting) in place.
- Remove the three screws in capstan assembly.
- Gently pull or fold capstan base forward until enough clearance is obtained to remove the capstan assembly.

CAUTION: Do not exert excessive force, a gentle pressure should suffice.

- Loosen the two setscrews(HEX HEAD) on rear of flywheel, pull out the capstan assembly.
- To reinstall capstan assembly, reverse above procedures.

IMPORTANT: A clearance of 0.02" must be maintained between the flywheel and capstan assembly.

CAPSTAN BELT REPLACEMENT

- Remove the rear cover and the capstan thrust plate.
- Capstan belt can be taken off through the flywheel and transport chassis, opening.

CAUTION: When installing the new capstan belt, be careful not to stretch it. Do not allow oil or grease to contact the capstan belt. After installing, clean it with TEAC rubber cleaner.

- Capstan belt tension adjustmnet can be made by loosening four mounting screws and moving the capstan motor.
- Apply a drop of LOCTITE on the screws when the adjustment is complete.

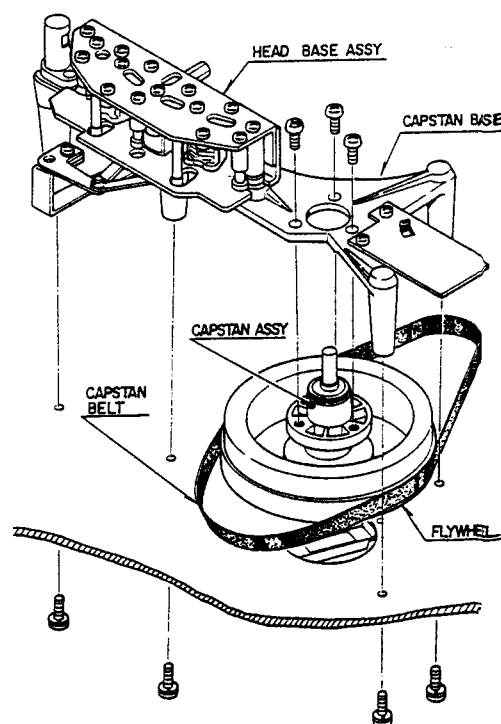


Fig. 3-4 Capstan Assembly Replacement

INDIVIDUAL HEAD REPLACEMENT

- Remove head housing cover by loosening screw on top of cover.
- Remove the two screws which retain head assembly and separate the head assembly from the chassis to allow easy replacement of the head (does not require this procedure when replacing erase head or with face plate removed).
- Replacement of head is done by using a 2mm nut driver (TEAC #5086014000). By removing two setnuts each head can be taken off easily (one screw for erase head). Slots provide access through the plate to these setnuts.

CAUTION: Do not touch other set screws.

- Note the position of the wires on the circuit board before unsoldering.
- Reverse the procedure to reinstall the new head.

NOTE: Replace the nuts securing the new head to the plate. Perform head alignment before operation.

Head installation mounting provides for left or right position. After reinstalling head, determine proper position while recording or playing back a tape.

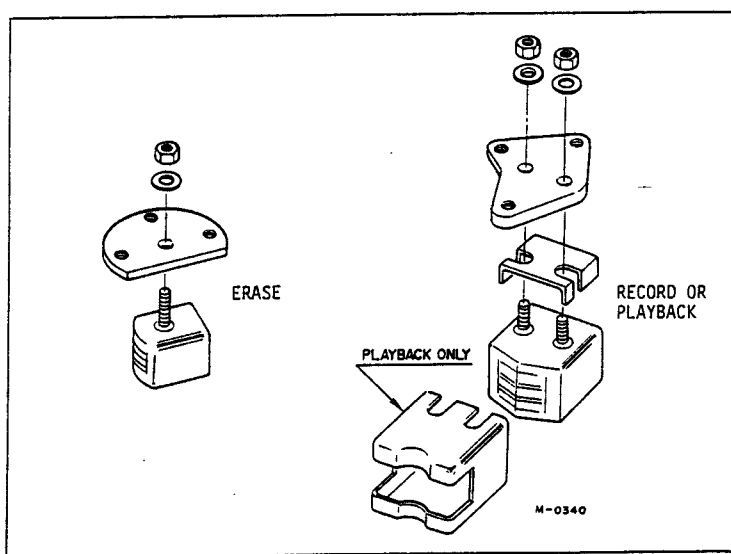


Fig. 3-5 Individual Head Replacement

4 HEAD ALIGNMENT -MECHANICAL-

ERASE HEAD: The erase head pole should be above the edge of a threaded tape by the width of a heavy pencil line. Turn the three screws indicated to obtain this height.

RECORD HEAD: The record head pole should be above the edge of a threaded tape by the width of a thin pencil line. Turn the three screws indicated to obtain this height.

IMPORTANT: After completing the height adjustment make certain head surfaces are parallel with tape guide surfaces when viewed from the side.

PLAYBACK HEAD: The reverse playback head pole should be even with the bottom of the tape and the forward play head pole should be even with the top of the tape.

NOTE: Refer to details below for the preceding alignments.

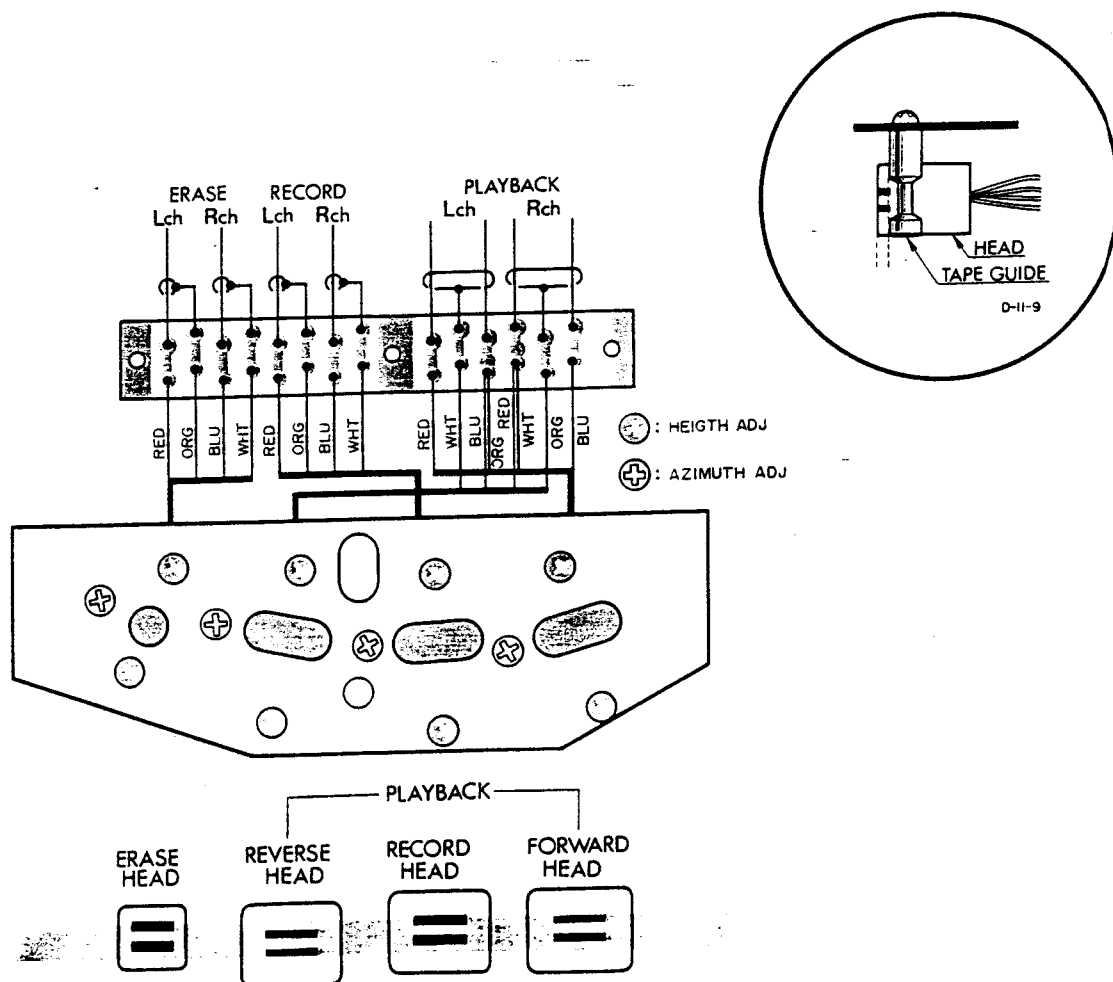


Fig. 4-1 Mechanical Head Alignment

5 MEASUREMENT AND ADJUSTMENT - MECHANICAL -

NOTE: The TEAC A-4010GSL uses a highly reliable three motor drive solenoid operated system and should require a minimum of mechanical maintenance or adjustment. These adjustments are made at the factory. Readjustment should only be required after many hours of operation or component replacement.

PINCH ROLLER PRESSURE

Pinch roller pressure is supplied by pinch roller pressure spring only and it is therefore most important that the solenoid plunger has fully bottomed before taking pressure measurement.

1. Block the automatic shut-off arm in the *ON* position.
2. Attach a suitable spring scale to the pinch roller shaft.
3. Place the unit in the play mode (▶ or ◀) and holding the scale as illustrated, slowly draw it away from the pinch roller.
4. Note the reading on the spring scale at the instant the pinch roller stops rotating.
5. The spring scale should indicate 1.5~2.5 kg (3.3~5.5 lbs).
6. If adjustment is necessary, adjust the double nuts on the capstan solenoid plunger.

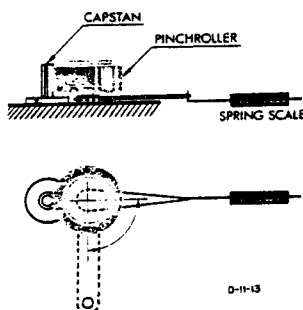


Fig. 5-1 Pressure Measurement

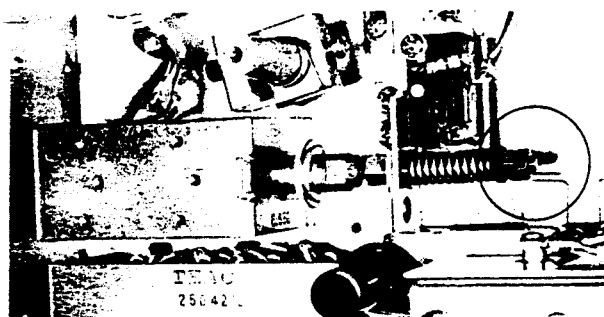


Fig. 5-2 Pressure Adjustment Nuts

FLUTTER & TAPE SPEED MEASUREMENT

Flutter should be measured in playback mode using a TEAC flutter free tape YTT-2003·2002. Connect test equipment to unit as shown in the figure. Measurement of flutter should be made in accordance with NAB standards. Values obtained with different standards or equipment can not be compared.

Flutter should not exceed. 7-1/2ips: 0.20%
3-3/4ips: 0.25%

The tape speed should be measured using TEAC flutter free tape, model YTT-2003·2002. These tapes contain a highly accurate 3 kHz tone. The indicated frequency should be 2985 ~3015 kHz for all speeds, both directions.

These figures apply to any tape position and direction (such as full take-up reel, full supply reel or about mid point).

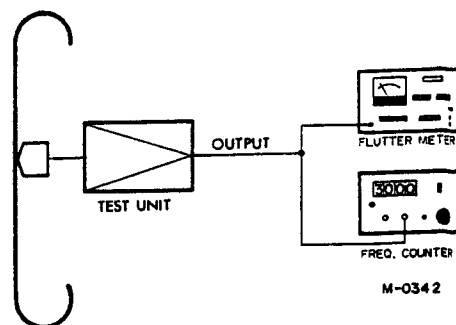


Fig. 5-3 Flutter & Tape Speed Measurement

REEL MOTOR TORQUE

IMPORTANT: Be sure the full required line voltage is applied and that the unit is set up for proper line frequency.

Holdback Tension -Forward-

1. Tape or block the automatic shut-off arm in the ON position.
2. Place an empty reel RE-702 (2" diameter hub) and spring scale on the left reel table as shown in figure.
3. Rotate the reel table clockwise and wind several turns of string around the hub.
4. Place the unit in the forward play mode (▶).
5. Pull the scale away from the reel against the motor torque with a steady smooth motion.
6. Note the spring scale reading while it is in steady motion. The spring scale reading should be 50~52 grams (torque: 250~260 g-cm).
7. If adjustment is required, move the slider of R-6 (D) until correct tension is obtained.

Holdback Tension -Reverse-

8. Place the empty reel and spring scale on the right reel table.
9. Place unit in the reverse play (◀) mode.

NOTE: Rotate the reel table counter clockwise.

10. Repeat above steps 3, 5, 6 of forward holdback tension section.
11. The spring scale reading should be 50~52 grams (torque: 250~260 g-cm).
12. Adjust the slider of R-8 (B) until correct holdback tension is obtained.

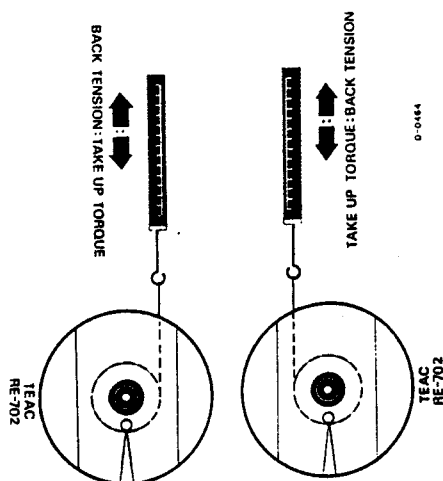


Fig. 5-4 Torque Measurement

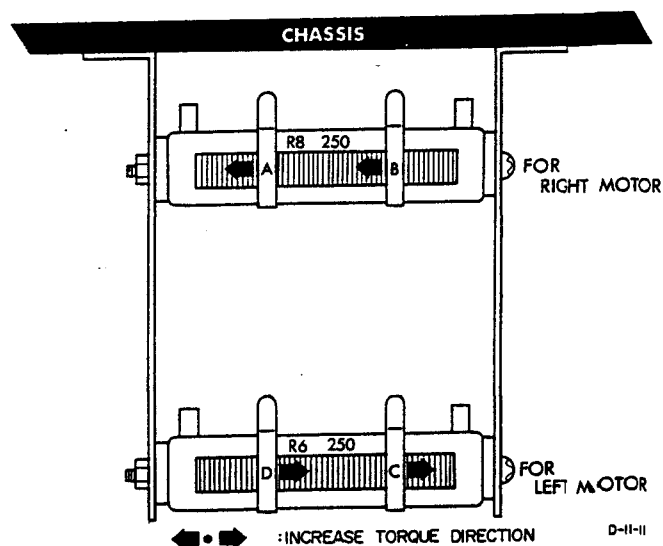


Fig. 5-5 Tensioning Resistor

Take-up Torque -Forward-

1. Place an empty reel RE 702 (4" diameter hub) and spring scale on the right reel table (see figure).
2. Place the unit in the forward play (▶) mode.
3. Allow the rotation of the reel to draw the scale toward the hub.
4. Hold the spring scale with enough force to allow a steady reading.
5. It should be 60~64 grams (torque: 300~320 g-cm).
6. If adjustment is required, adjust the slider of R-8 (A).

Take-up Torque -Reverse-

7. Place an empty reel on left reel table and depress the reverse button (◀).
8. Repeat above step 3, 4, 5 of forward take-up torque section.
9. If adjustment is required, adjust the slider of R-6 (C) (60~64 grams).

Brake Torque

Brake adjustments are made with no power applied to the unit.

1. Place an empty 4" hub reel and spring scale on left reel table.
2. Wind several turns of string counter clockwise around the hub and attach a suitable spring scale to the free end of the string.
3. Pull the spring scale away from the reel. Take a reading only when the reel is in steady motion since the force required to overcome static friction will produce a false, excessively high initial reading.
4. The reading should be 260~300 grams (1,300~1,500 g-cm).
5. If adjustment is required, adjust the brake adjusting spring arm for the proper brake torque.
6. To check and adjust the right reel brake repeat all steps as described for left reel with the exception that all directions of rotation are clockwise. Adjust brake adjusting spring arm (right) for proper brake tension.

IMPORTANT: The difference in torques between the right and left brake should be kept within 10 grams (50 g-cm).

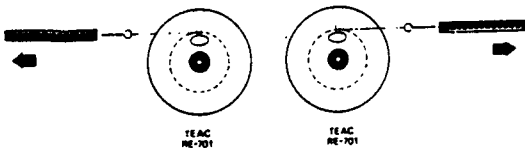


Fig. 5-6 Brake Torque Measurement

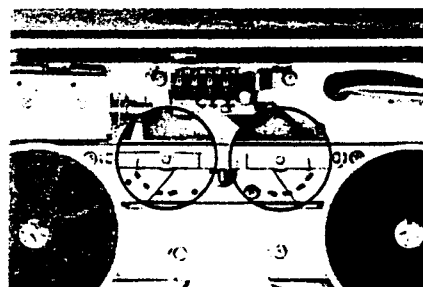


Fig. 5-7 Brake Adjustment Arm

FAST WIND TIME

NOTE: Clean all tape guide components and check for proper AC line voltage.

Using a 1,200 feet tape on a 7" reel, the fast wind time (fast forward or fast rewind) should be 100 seconds or less.

MEMO

TEAC

6 MEASUREMENT AND ADJUSTMENT

- ELECTRICAL -

GENERAL NOTICE

Before performing any maintenance on this unit, all metal parts that the tape will come into contact with must be cleaned and demagnetized.

It is important that the unit is set for the proper voltage and frequency for your locality.

Standard test tapes and test equipment must be used when performing maintenance to insure reliable results.

Procedures for checks and adjustments, unless otherwise indicated, are for the left channel at 7-1/2ips. The same procedures are to be applied to the right channel and 3-3/4ips tape speed.

All controls mentioned in this book will be printed in bold letters and will be exactly as they appear on the unit.

Double designated symbol numbers refer to left channel/right channel.

THD: Third harmonic distortion.

Value of "dB" in the text refers to 0dB=0.775V, except where specified. If a level meter or an AC VTVM calibrated to 0dB =1V is to be used, appropriate compensation should be made by adding approximately +2 dB.

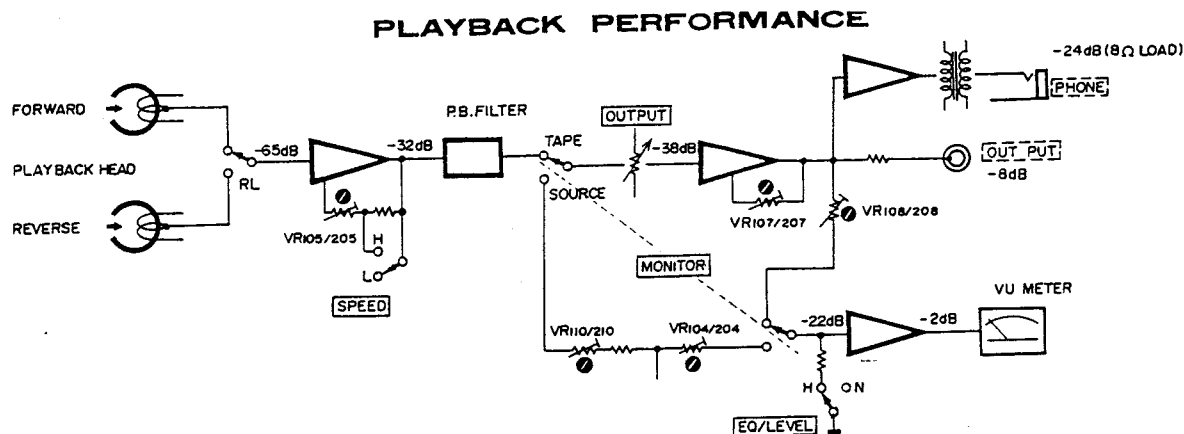


Fig. 6-1 Simplifier Diagram -Playback-

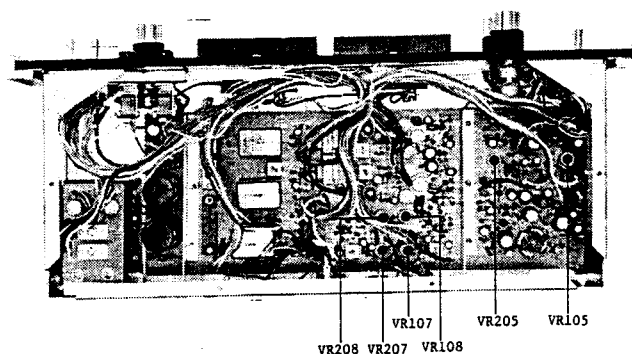


Fig. 6-2 Adjustable Parts Location

PLAYBACK HEAD AZIMUTH ADJUSTMENT

Coarse Adjustment

1. Connect a level meter to either OUTPUT jack.
2. Thread a TEAC test tape YTT-1003 on the unit.
3. Depress forward button (▶) and play the 15 kHz test tone in section 2 of the test tape.
4. Slowly rotate the azimuth screw(forward) until max. indication is obtained on the level meter.

NOTE: If during playback, a slight pressure on the heads results in a rise of the reading of the level meter, head alignment readjustments should be accomplished.

Fine Adjustment

CAUTION: After coarse adjustment, do not make large corrections, turn azimuth screw 1/4 turn or less.

5. It is absolutely essential to accomplish the coarse adjustment before using this method to avoid phase errors larger than 45°.
6. Connect the test equipment as shown in Fig. 6-7.
7. Play a 10 kHz signal and adjust the azimuth screw until the oscilloscope shows that the signals are less than 45° in phase.
8. Secure the screw with a drop of LOCTITE and apply the above procedure to the reverse playback head.

SPECIFIED OUTPUT LEVEL SET

NOTE: Connect a 10 k Ω load to the OUTPUT jacks when not using the TEAC M-826A (0 dB = 0.775V) level meter.

Unless otherwise specified, the EQ/LEVEL switch must always be in the NORMAL position during measurement and adjustment.

9. Play the 400 Hz tone in section 1 of the test tape. This tone is recorded at operating reference level (1% of the THD level).
10. Turn the OUTPUT controls full clockwise, and adjust VR-107/207 for -2 dB reading on level meter.
11. Then turn OUTPUT controls(c.c.w.) until a -8 dB reading is obtained on the level meter.

NOTE: If equal reading cannot be obtained in step 10. Readjust VR-107/207 slightly.

NOTE: This is the specified output level set. Do not disturb this setting until the remaining adjustments have been completed.

VU METER CALIBRATION -PLAYBACK-

12. While playing the 400 Hz tone(1% THD) in section 1 of the test tape, adjust VR-108/208 for a reading of 0 VU on the VU meter.

FREQUENCY RESPONSE

13. Play the test tones from 15 kHz down to 40 Hz. (Recorded at 10 dB below operating reference level.)
14. Compare the readings obtained on the level meter with the response limits given in figure below.
15. In case of any deviation in the response curve, check head azimuth alignment, clean the heads, then adjust VR-105/205 for the best response.

NOTE: 7-1/2ips tape speed must be used for frequency response checks and adjustments. Do not attempt VR-105/205 readjustments at 3-3/4ips.

EQ/LEVEL switch check

- While playing back 400 Hz (operating reference level) signal, move the EQ/LEVEL switch from HIGH to NORMAL position. The VU meter should decrease 3 dB.

SIGNAL TO NOISE RATIO

NOTE: Values given are obtained using an unweighted level meter while the supply and take-up motors have voltage applied but are not rotating. The OUTPUT control should be at specified output position. (See SPECIFIED OUTPUT LEVEL SET, item 11.)

1. Thread a tape on the unit, leaving the tape outside the capstan and pinch roller. Tension arm should be in *ON* position.
2. Place the unit in the PLAY mode (▶) (the tape will not move).
3. The level meter connected to the OUTPUT jacks should indicate -56 dB or less.
4. This corresponds to a signal to noise ratio of 48 dB (difference between residual noise -56 dB and specified output level -8 dB for 1% THD).

For a 3% THD signal to noise ratio, 6 dB is added, giving 56 dB (3% THD is 6 dB above 1% THD level).

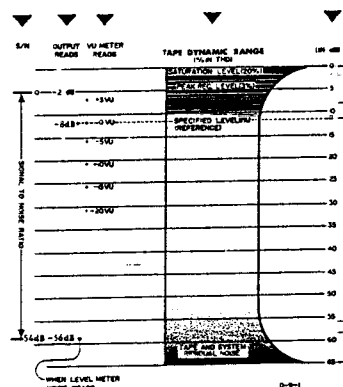


Fig. 6-3 Signal To Noise Ratio Computation

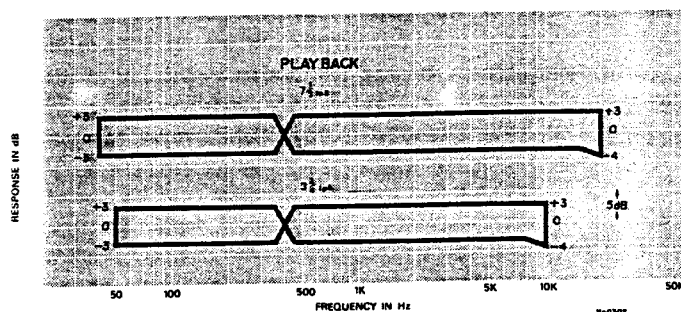


Fig. 6-4 Freq. Response Limits -Playback-

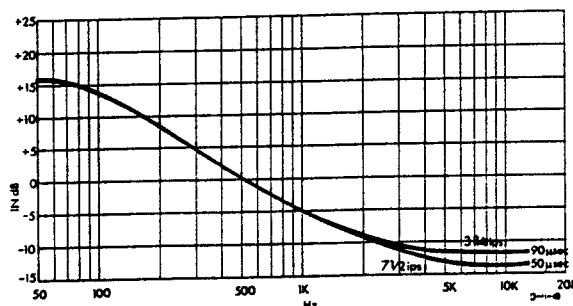


Fig. 6-5 EQ. Curves -Playback-

MONITOR / RECORD PERFORMANCE

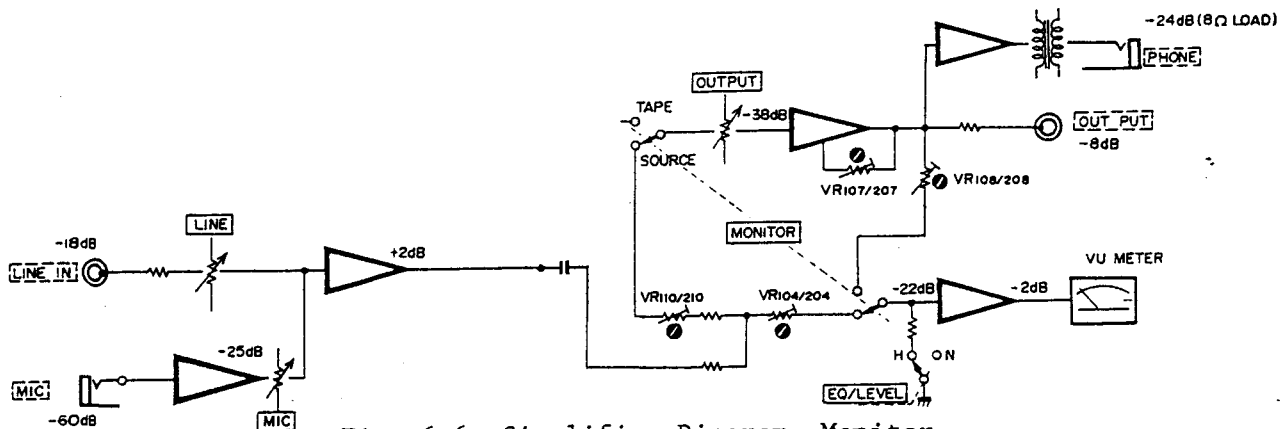


Fig. 6-6 Simplifier Diagram -Monitor-

MINIMUM INPUT LEVEL ADJUSTMENT

LINE Input

1. Connect an AF oscillator to the LINE IN jacks.
2. Apply a 400 Hz signal at -18 dB.
3. Place the MONITOR switch in the SOURCE position and turn the LINE controls fully clockwise.
4. Adjust VR-110/210 to obtain a specified output level of -8 dB at OUTPUT-jacks.

MIC Input

5. After adjusting VR-110/210, apply a 400 Hz signal at -70 dB to the MIC IN jacks.
6. Rotate the MIC controls fully clockwise.
7. The output should be -8 dB (specified output level).

NOTE: Mic input requires no adjustment, only an operational check. After completing the check rotate MIC controls fully counter clockwise to eliminate noise from mic jacks or mic preamplifiers.

SPECIFIED INPUT LEVEL SET

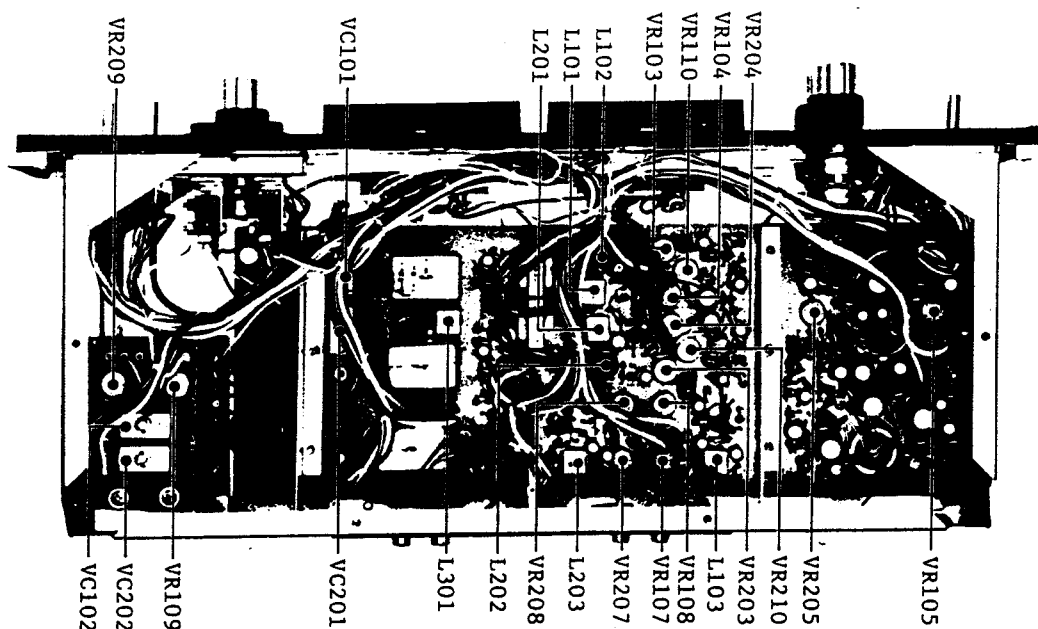
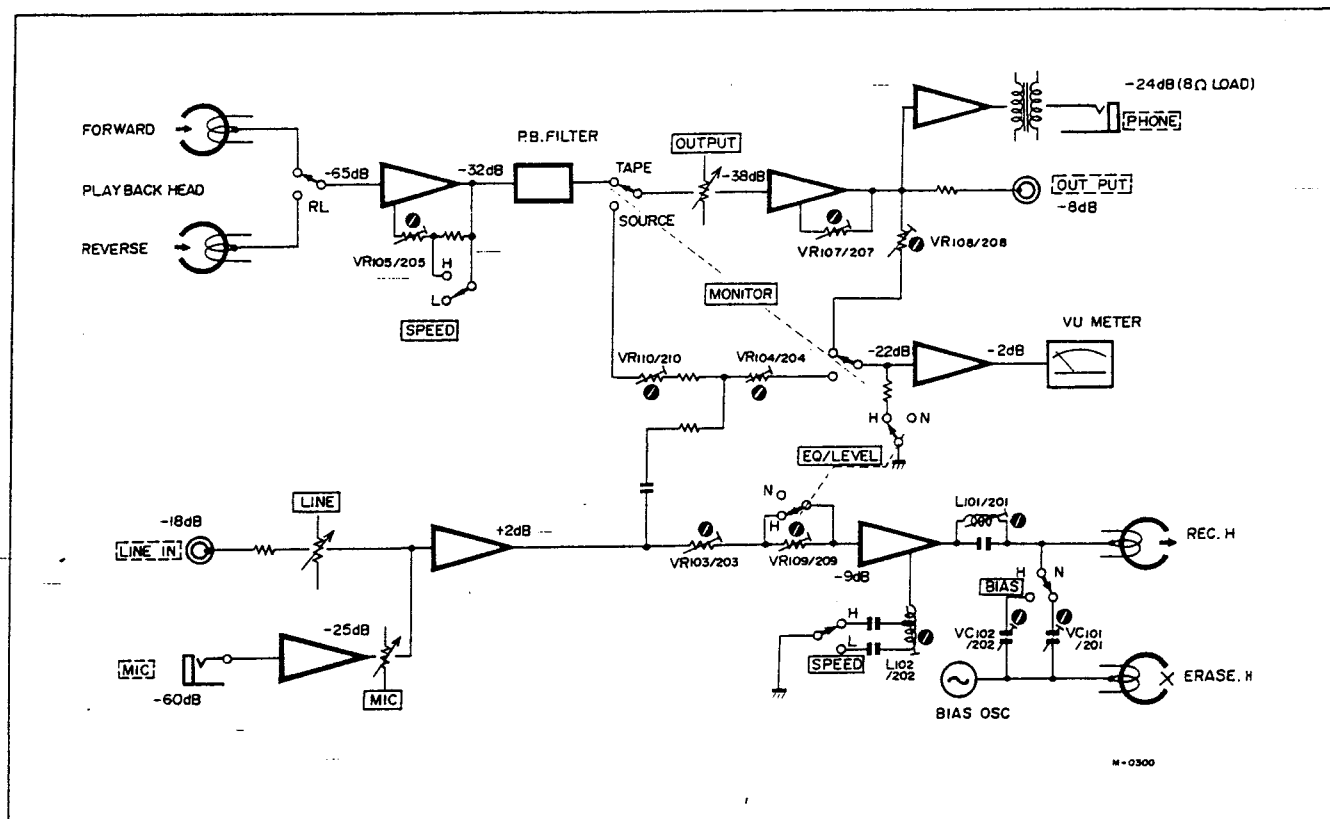
8. Apply a 400 Hz signal at -8 dB to the LINE IN jacks.
9. Turn the LINE controls (c.c.w.) until a -8 dB reading is obtained on the level meter.

NOTE: Do not disturb the specified input level position of these controls until the remaining checks and adjustments are completed. The difference between the channels must not exceed 2 dB as indicated on the level meter. If it is not within limits, check the amplifier gain, the LINE controls reference marks should be together.

VU METER CALIBRATION -MONITOR-

10. With the same 400 Hz signal at -8 dB applied and the MONITOR switch in SOURCE, adjust VR-104/204 for 0 VU on the VU meters.

BLOCK DIAGRAM AND ADJUSTABLE PARTS LOCATION



IMPORTANT: Before making any adjustments on the record amplifier, be sure that all tests in the HEAD ALIGNMENT, PLAYBACK and MONITOR PERFORMANCE sections have been accomplished.

Optimum recording performance (Bias levels, recording levels and frequency response) is dependent upon tape characteristics. The TEAC A-4010GSL is factory set for Scotch #203 tape. Service data is based upon the use of Scotch #203 or equivalent tape.

RECORD HEAD AZIMUTH ADJUSTMENT

Coarse Adjustment

NOTE: The effect of turning the azimuth screw will not immediately register on the level meter. A slight delay will be noticed. Therefore, the screw must be rotated slightly, and then pause to see the effect.

1. Connect a Level Meter to the OUTPUT jacks and an AF oscillator to the LINE IN jacks.
2. Place the MONITOR switch to SOURCE and adjust the AF oscillator to obtain a signal of 15 dB below the specified level. (The level meter will indicate -23 dB). After this is set, turn MONITOR switch to TAPE position.
3. Make certain that the LINE control is at the specified input level position, then set the AF oscillator to 10 kHz.
4. Thread a record test tape on the unit and record this signal.
5. Adjust the azimuth screw for maximum indication on the level meter.

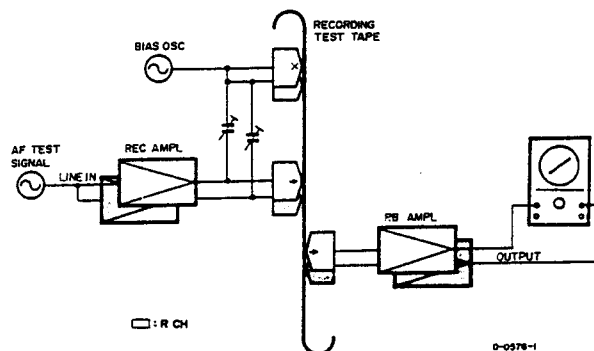


Fig. 6-7 Fine Adjustment Set-up

Fine Adjustment

NOTE: It is absolutely essential to accomplish the coarse adjustment before using this method, to avoid phase error larger than 45°.

6. Connect the test equipment as shown in figure below.
7. Apply a 10 kHz signal at -23 dB to the LINE IN jacks and record this signal.
8. Carefully adjust the azimuth screw until the oscilloscope shows that the signal are less than 45° in phase.
9. After adjustment secure the azimuth and height adjustment screws with a drop of LOCTITE.

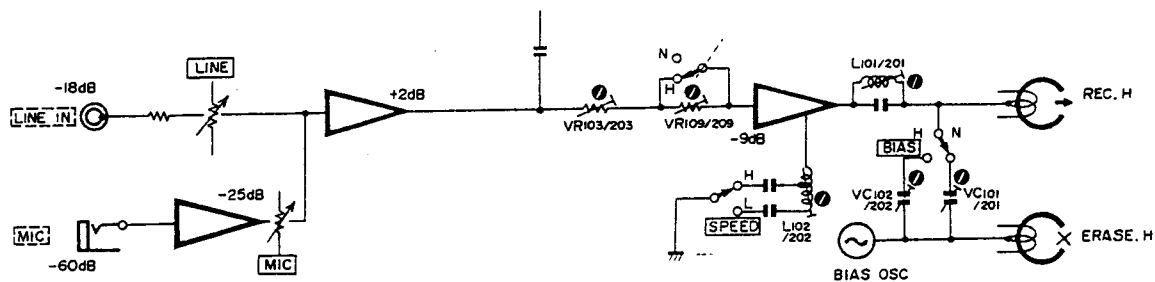


Fig. 6-8 Simplifier Diagram -Record-

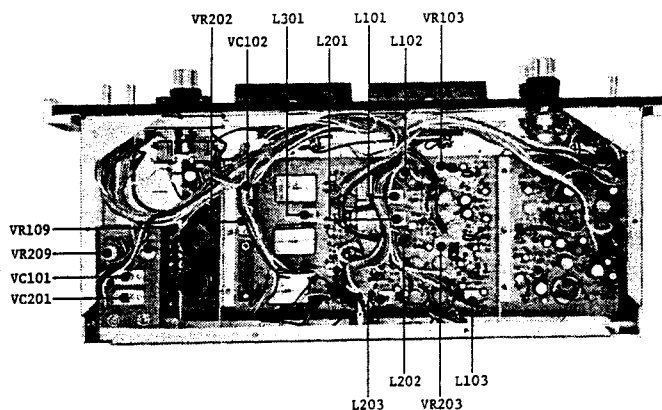


Fig. 6-9 Adjustable Parts Location

BIAS TRAP ADJUSTMENT

NOTE: The bias trap tank circuit keeps the bias signal from reaching the record and monitor amplifier and under normal no signal conditions, bias leakage voltage should not be present at the OUTPUT jacks.

1. Place the unit in RECORD with no signal applied.
2. Connect a VTVM to the junction of C-115/L-101.
3. Adjust L-101 for a minimum reading.
4. Connect the VTVM to the junction of C-215/L-201.
5. Adjust L-201 for a minimum reading.
6. Adjust L-103/203 for minimum VTVM indication at OUTPUT jacks.

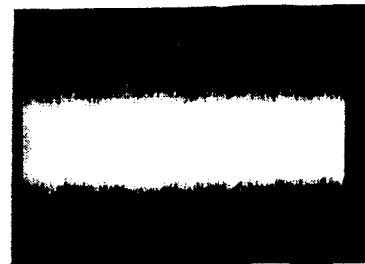


Fig. 6-10 Bias Voltage Leakage

BIAS ADJUSTMENT

NOTE: These adjustments are only made at 7-1/2ips tape speed, the bias oscillator frequency is 100 kHz $\pm$ 5 kHz.

-HIGH position-

1. Thread record test tape Scotch #203 on the unit and apply 400 Hz /-8 dB to LINE IN jacks.
2. Place the BIAS, EQ/LEVEL switch to HIGH and place the unit in the record mode. Place the MONITOR switch in the TAPE position.
3. Adjust capacitor VC-102/202 for a peak on the level meter. Turn the capacitors clockwise until a decrease of 0.5 dB is obtained.

-NORMAL position-

4. Thread record test tape Scotch #150 on the unit.
5. Place the BIAS, EQ/LEVEL switch to NORMAL and place the unit in the record mode.
6. Adjust capacitor VC-101/201 for a peak on the level meter. Turn the capacitors clockwise until a decrease of 0.5 dB is obtained.
7. After completing this adjustment, return BIAS, EQ/LEVEL switch to HIGH position.

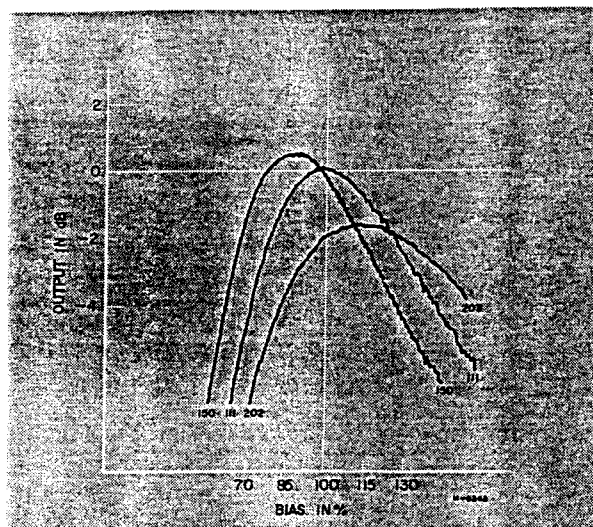


Fig. 6-11 Bias Characteristic

RECORD LEVEL SET -HIGH POSITION-

1. The OUTPUT controls must be at the specified output level position (-8 dB at OUTPUT jacks) and set the BIAS, EQ/LEVEL switch to HIGH position.
2. Apply a 400 Hz signal at -8 dB to the LINE IN jacks.
3. Place the unit in the record mode, the MONITOR switch in the TAPE position.
4. While recording a 400 Hz signal on the Scotch #203 record test tape, adjust VR-103/203 for a reading of 0 VU on the VU meter (-8 dB at the OUTPUT jacks.)

RECORD LEVEL SET -NORMAL POSITION-

5. Set the BIAS, EQ/LEVEL switch to NORMAL position.
6. Using a Scotch #150 record test tape, record 400 Hz/-8 dB test signal.
7. While recording this signal, adjust VR-109/209 for 0 VU on the VU meter.
8. After completing adjustment, return the BIAS, EQ/LEVEL switch to HIGH position.

OVERALL FREQUENCY RESPONSE

IMPORTANT: To avoid saturation of the tape, these checks should be made at least 20 dB below the specified input level. Any signal feeding into the test equipment should be filtered out by adjusting the external bias trap. A broad band VTVM may be used on the output of the unit for this adjustment.

BIAS switch in HIGH position

9. Thread a record test tape Scotch #203 on the unit, the BIAS switch must be at HIGH position.
10. Apply a signal swept from 50 Hz to 15 kHz/-28 dB to the unit while recording on a record test tape.
11. Repeat the above procedure for 3-3/4ips using a signal from 50 Hz to 7.5 kHz.

NOTE: If the response is not uniform, the heads should be checked for accumulated oxide and dirt. Then if no dirt is found, the equalization coils L-102/202 should be adjusted.

12. If further adjustment is required, C-117/217 must be changed, if the high-end response is too high, a lower value capacitor must be installed.

BIAS switch in NORMAL position

NOTE: This is a performance check only, no adjustment is provided and HIGH(Scotch #203) adjustment should be completed before starting this procedure.

13. Thread a Scotch #150 high output tape on the unit.
14. Place the BIAS, EQ/LEVEL switch in the NORMAL position.
15. Repeat the overall response check at both tape speeds.
16. The record equalization should give the proper frequency response.
17. After this check, return BIAS, EQ/LEVEL switch to HIGH position.

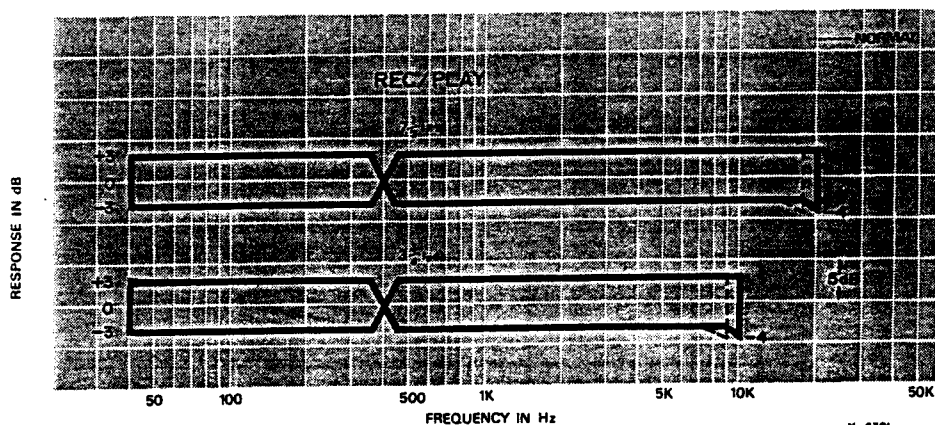


Fig. 6-12 Freq. Response Limits -Record-

LEVEL VARIATIONS

Using Scotch #203 test tape, recorded at the specified level setting with BIAS switch in HIGH position, during record/playback the output level variations should not exceed those shown in the below chart.

7-1/2ips:	0.5dB at 400Hz
	1.0dB at 10kHz
3-3/4ips:	1.0dB at 5kHz



Fig. 6-14 Level Variation

OVERALL SIGNAL TO NOISE RATIO

IMPORTANT: Clean and demagnetize the heads before proceeding. It is extremely important that all tests described in the proceeding paragraphs have been completed and that all controls adjusted are left unaltered.

1. Thread a record test tape (Scotch #203) on the unit.
2. Remove the AF oscillator from the LINE IN jacks.
3. Place the unit in the record mode with no signal applied. BIAS, EQ/LEVEL switch in HIGH position.

NOTE: Noise readings, when taken while recording, may be affected by the bias signal which could be leakings through. It is therefore good practice to rewind the no signal recorded section and take the noise reading during playback.

4. Note the point on the index counter where recording begins.
5. Rewind the tape and play it back.
6. The noise level as indicated on the level meter should be -55 dB or less. This is equivalent to a 47 dB signal to noise ratio at operating reference level.

NOTE: Bias, erase and playback amplifier noise are all included in in this measurement. All frequencies between 40 Hz and 15 kHz are measured unweighted.

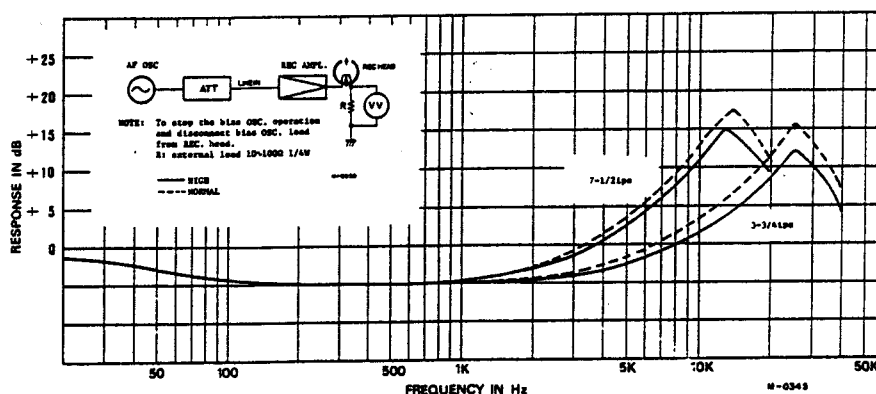


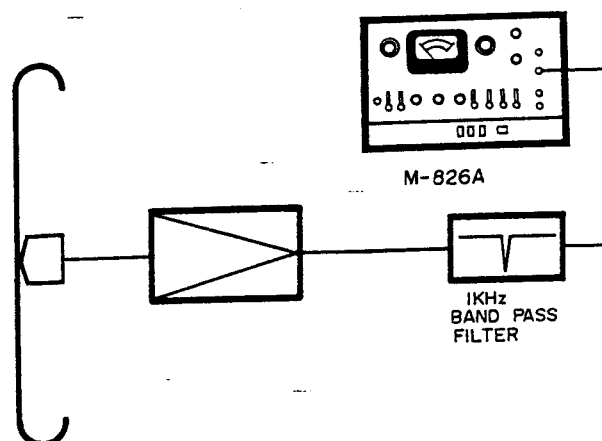
Fig. 6-13 EQ. Curves -Record-

ERASE EFFICIENCY

NOTE: To measure erase efficiency, a 1 kHz band pass filter (TEAC M-204 CL filter) must be used. The LINE and OUTPUT controls must be at specified level position.

Due to the high level of this signal, it is recommended that only a short recording be made (approximately 30 seconds) to prevent damage to the VU meters.

1. Apply a 1 kHz signal at 0 dB to the LINE IN jacks.
2. Place the unit in record mode and record this signal.
3. Rewind the recording to the beginning and remove the AF oscillator from the LINE IN jacks.
4. Place the unit in RECORD mode and record over this portion of tape again.
5. Rewind the tape to the starting point and connect a level meter to the OUTPUT jack, through the 1 kHz band pass filter.
6. Play the erased portion of the tape.
7. The level meter should indicate -62 dB or less.



D-0577

Fig. 6-15 Erase Efficiency Set-up

7 PREVENTIVE MAINTENANCE

The inner mechanism of the TEAC A-4010GSL is designed so as to require a minimum of maintenance. However, for optimum operation and long life, frequent cleaning of the tape path, sensing post, tension arm, tape guides, heads, capstan and pinch roller is a necessity. Do not neglect these easy procedures, if possible they should be done before each recording session and after approximately 50 hours of playback use.

The following maintenance procedures are to be carried out after parts replacement, after extended periods of use or at overhaul. When installing new parts always clean the mechanism thoroughly using the TEAC Cleaning Kit.

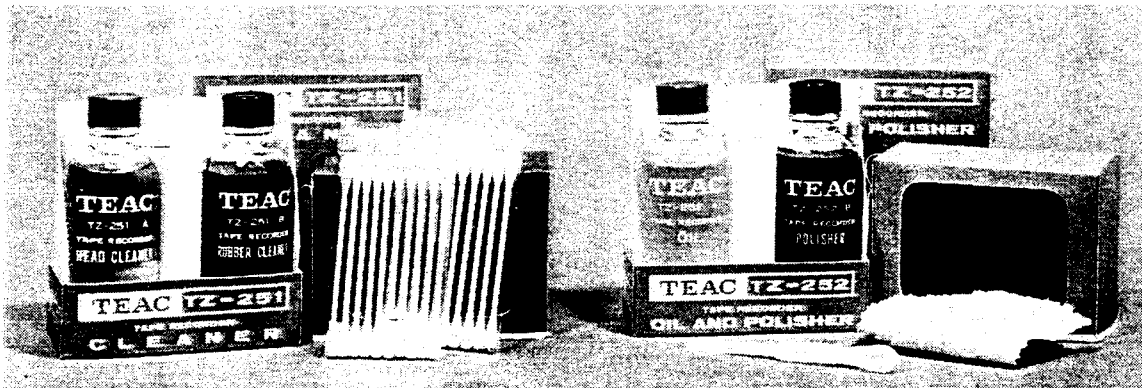


Fig. 7-1 Maintenance Equipment

DEMAGNETIZATION: Metal parts in contact with the tape will become magnetized after long periods of use (except erase head). Magnetization of record/playback heads causes noise in recording and reproduction. Heads should be demagnetized at every 50 hours of use, and before any important recording is done. Refer to Operating Instructions.

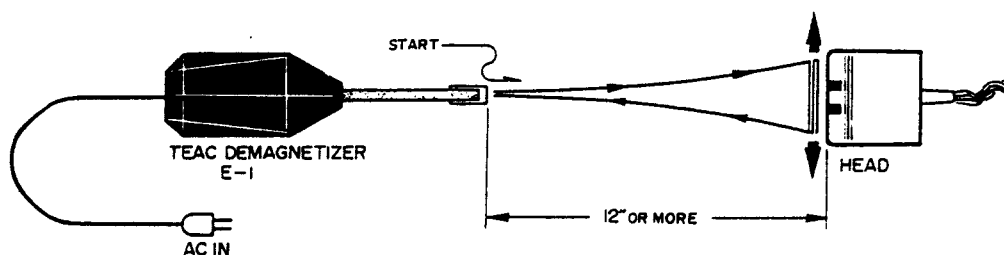


Fig. 7-2 Demagnetization

LUBRICATION: Under normal conditions the unit will not require lubrication. Most of the bearings and bushings are of the oilless type. Since there are many rubber parts in the transport mechanism, excessive or improper lubrication could cause problems. If lubrication is required, the following points should be lubricated:

Capstan bushing, pinch roller shaft 1 drop
Motor 1~2 drops in the plastic tubes

Parts to be lubricated should be cleaned and old oil and dirt removed before relubricating. Observe instructions as to type of oil, points to be lubricating.

Motors should be lubricated immediately after use while still warm. After oiling motors keep the unit in the vertical position for 2~3 hours to allow thorough absorption of oil.

CLEANING: If excess oxide accumulates on the surface of tape path components, normal operation and characteristics cannot be expected. Periodic cleaning should be done with proper cleaning materials. Refer to Operating Instructions.

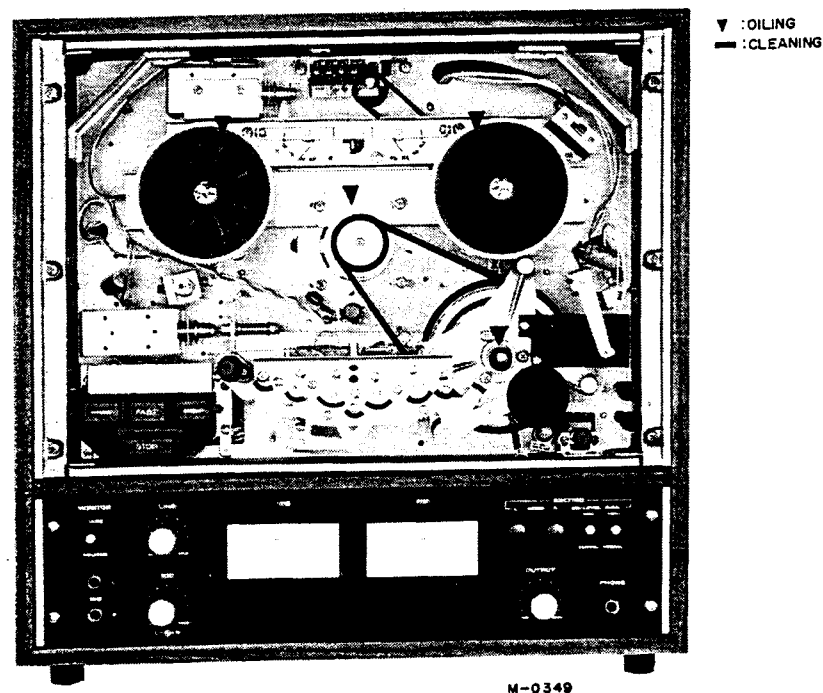


Fig. 7-3 Location Of Oiling and Cleaning Parts

TROUBLE SHOOTING CHART

NOTE: Our investigation into apparent malfunctions for which owners bring their machines into our repair shops, has shown that an actual mechanical defect occurs in very few cases. Usually the indicated defect is as a result of improper operation of the machine, improper cleaning or lack of minor maintenance, or inadequate supplementary or associated equipment.

If your unit fails to perform properly, refer to the handbook of operation, clean and lubricate as per the instructions. Carefully check auxiliary or associated equipment before disassembling the machine or bringing it to the repair shop or service center. Close adherence to the maintenance, cleaning, lubricating and demagnetizing procedures outlined in the owners handbook will result in a long service life and optimum performance of your unit.

MECHANICAL MALFUNCTION	CHECK POINTS
Capstan fails to turn in play mode	Remote control jumper plug not installed or loose P-2. Belt off or slipping. Capstan motor defective. Capstan bearing defective. Reverse relay K-3. TAPE SPEED switch S-2. Phase capacitor C-32.
Pinch roller fails to contact capstan in play mode	Pinch roller pressure incorrect. VOLTAGE SELECTOR switch in wrong position. Diode D-2. Capacitor C-4. Capstan solenoid L-2. The normal DC resistance of the solenoid is approx. 1.3k Ω .
Takeup motor does not operate or operates with improper tension in the forward mode	Right reel motor assy. Wire wound resistor R-8.
Supply motor does not operate or operates with improper tension in the forward mode	Left reel motor. Wire wound resistor R-6. VOLTAGE SELECTOR switch in wrong position.
Tape speed not normal or excessive wow and flutter	Belt on wrong pulley step. Oil on belt or pinch roller. Defective pinch roller or belt. Belt loose. improper pinch roller pressure. NOTE: The capstan motor will not cause wow and flutter.
Tape damage	Reel height incorrect. Excessive takeup tension. Excessive holdback tension. Brake torque not even.
No automatic reverse. Operates normally when reverse button is pressed.	Sensing post dirty. Foil length too short. Sensing relay K-6. Tape threading. Poor tape.
Tape squeal	Poor tape. Excessive holdback tension. Tape path components dirty.
Fast wind inoperative	Switch coil K-4. Button assembly switch alignment. NOTE: If K-4 switch coil is defective, the FAST button will not stay in.

PLAYBACK MALFUNCTION	CHECK POINT
No playback	MONITOR switch is in SOURCE. Interconnecting cords out or loose. Head dirty or defective. Playback ampl. circuit. PLAYBACK control is set position.
Playback hissing noise	Improper program level during record. NOTE: A highly efficient tweeter in the speaker system will cause hiss to be prominent. Decrease tweeter level, record at a higher level.
Loss of high frequencies	Tape faulty. Heads dirty. Heads worn or out of AZIMUTH alignment.
Channels unbalanced during playback	Tape faulty. Heads dirty. Heads worn. Playback level adjustment.
Crosstalk between forward and reverse tracks	Head switching relay K-7. Head out of alignment.
RECORD MALFUNCTION	
No record	Interconnecting cables loose or out. Heads dirty. Record ampl. circuit. Bias oscillator assy.
Loss of high frequencies during record	Head dirty. Tape tension incorrect. Tape faulty. Bias adj. improper.
No erase	Erase head dirty. Bias oscillator assy.
No VU light	To replace the lamp. Procedure: Turn off power, pull off the plastic VU meter cover. Fold the wires holding the lamp forward. Folder in new lamp with low heat iron. Fold wires back. Replace cover.
Channels not balanced during record	Head dirty or improper bias. Out of adjustment. Improper record level calibration.

Should you have any questions concerning this manual, please contact Mr. N. Nishimura, Instruction Manual Project Department, your query will receive personal attention.

Address: TEAC Corporation
Sales Office
Instruction Manual Project Dept.
Shinjuku Building
1-8-1, Nishi-Shinjuku,
Shinjuku, Tokyo,
Japan

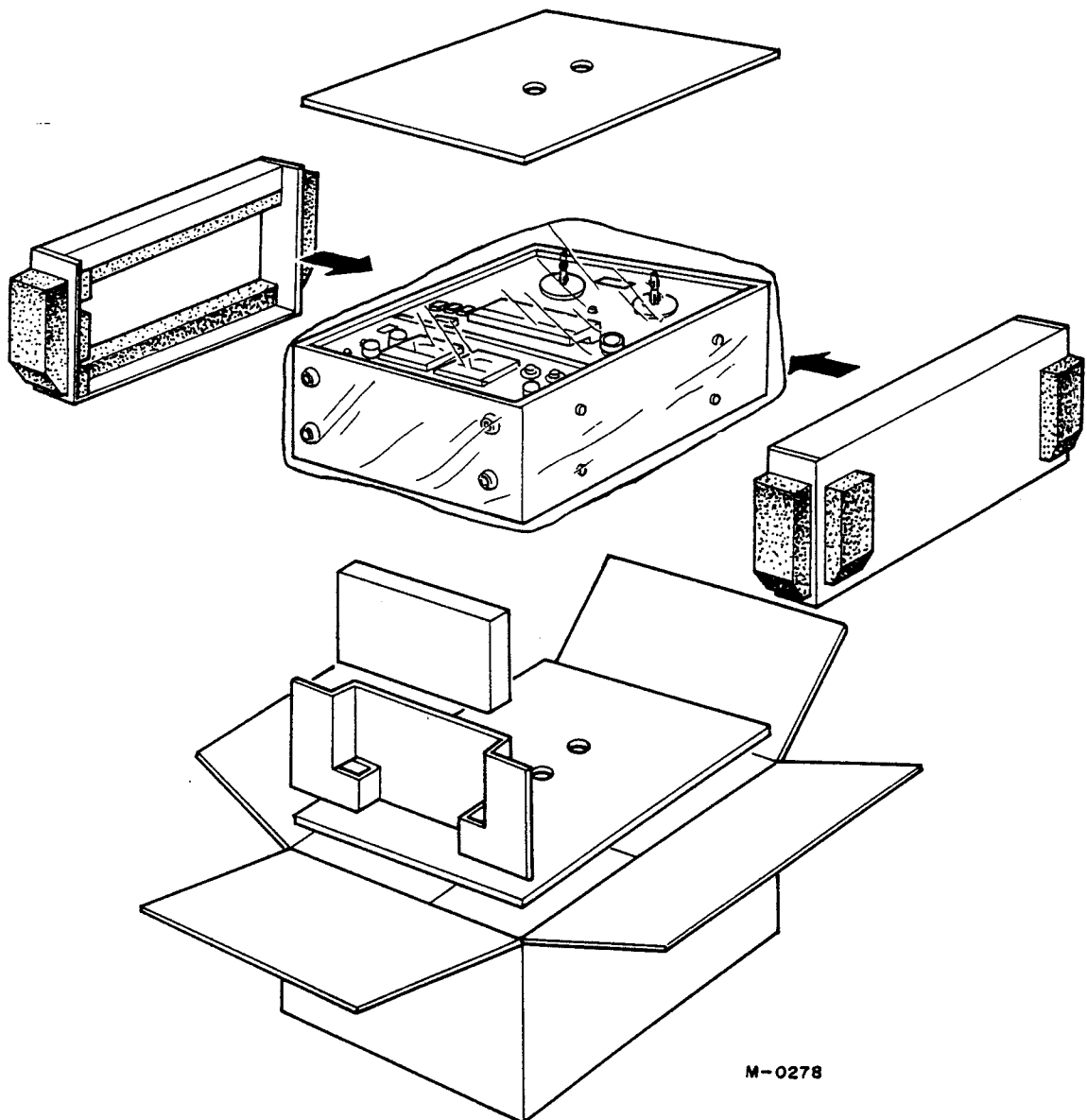
WARRANTY

WARRANTY

Your TEAC equipment has been manufactured under strictest quality control. Its normal operation is under warranty. However, warranty terms may vary with the country(area) in which it was purchased and for different models of equipment. The warranty terms are fully described in the enclosed warranty card. Please read the card for complete details.

SHIPPING INSTRUCTIONS

If the unit is to be sent back to the TEAC factory (service department) for repair, carefully pack as shown below.



NOTES

ALL SIGNAL LEVEL AND DC VOLTAGES OBTAINED WITH HIGH INPUT IMPEDANCE VTVM AND SHOULD BE WITHIN 20% AT RATED LINE VOLTAGE.

SIGNAL LEVEL READINGS WERE OBTAINED UNDER THE FOLLOWING CONDITIONS.

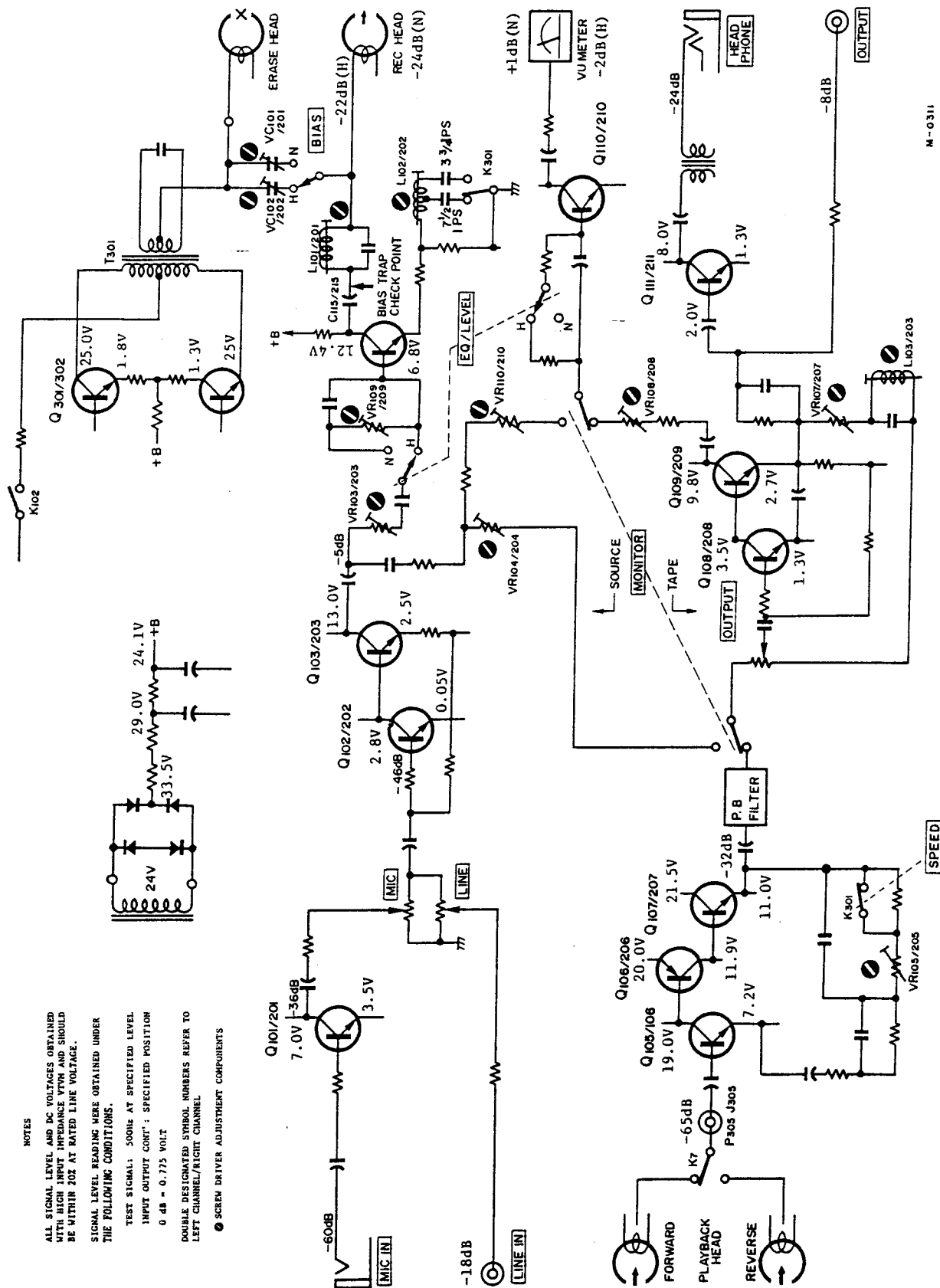
TEST SIGNAL: 500Hz AT SPECIFIED LEVEL

INPUT OUTPUT CONT: SPECIFIED POSITION

0 dB = 0.775 VOLT

DOUBLE DESIGNATED SYMBOL NUMBERS REFER TO LEFT CHANNEL/RIGHT CHANNEL.

● SCREEN DRIVER ADJUSTMENT COMPONENTS



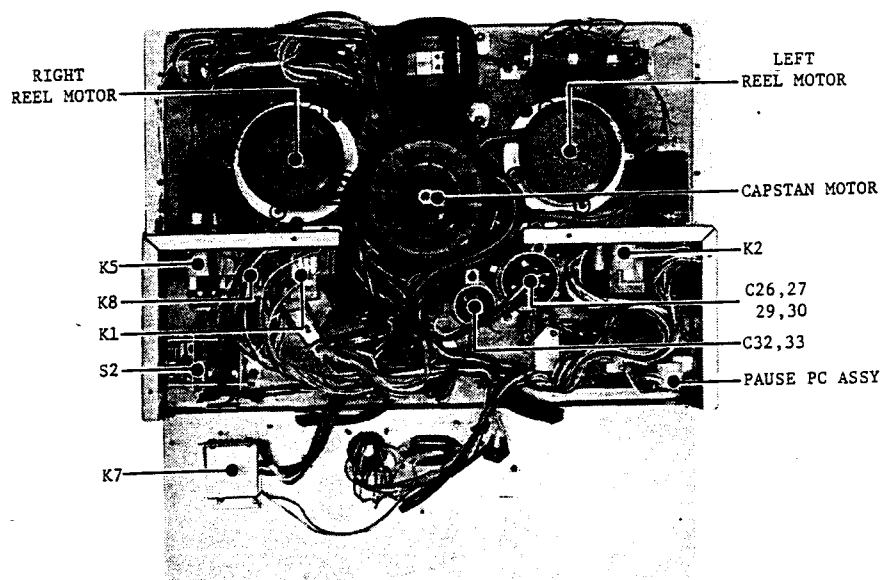
M-0311

SIMPLIFIED BLOCK DIAGRAM

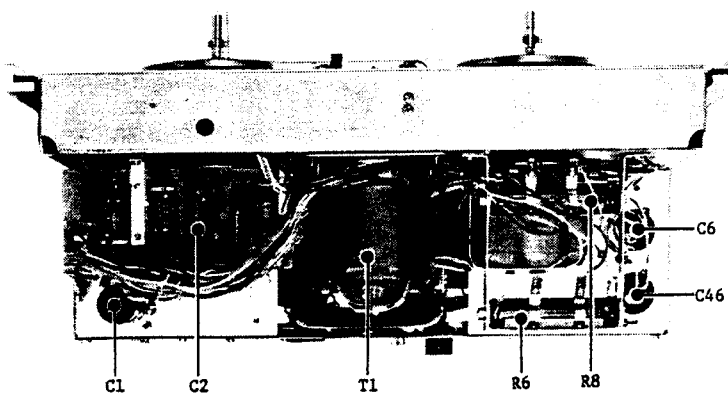
COMPONENTS LOCATION -TAPE TRANSPORT-



FRONT VIEW



REAR VIEW



TOP VIEW

MANUAL CHANGES

REVISIONS

Change notices, recommended modifications etc. will be issued for the models in this manual, when appropriate.
This sheet is in loose leaf form and should be filed behind this page for convenient reference.

TEAC®

A-4010GSL

STEREO TAPE DECK
PARTS LIST

REPLACEMENT INFORMATION

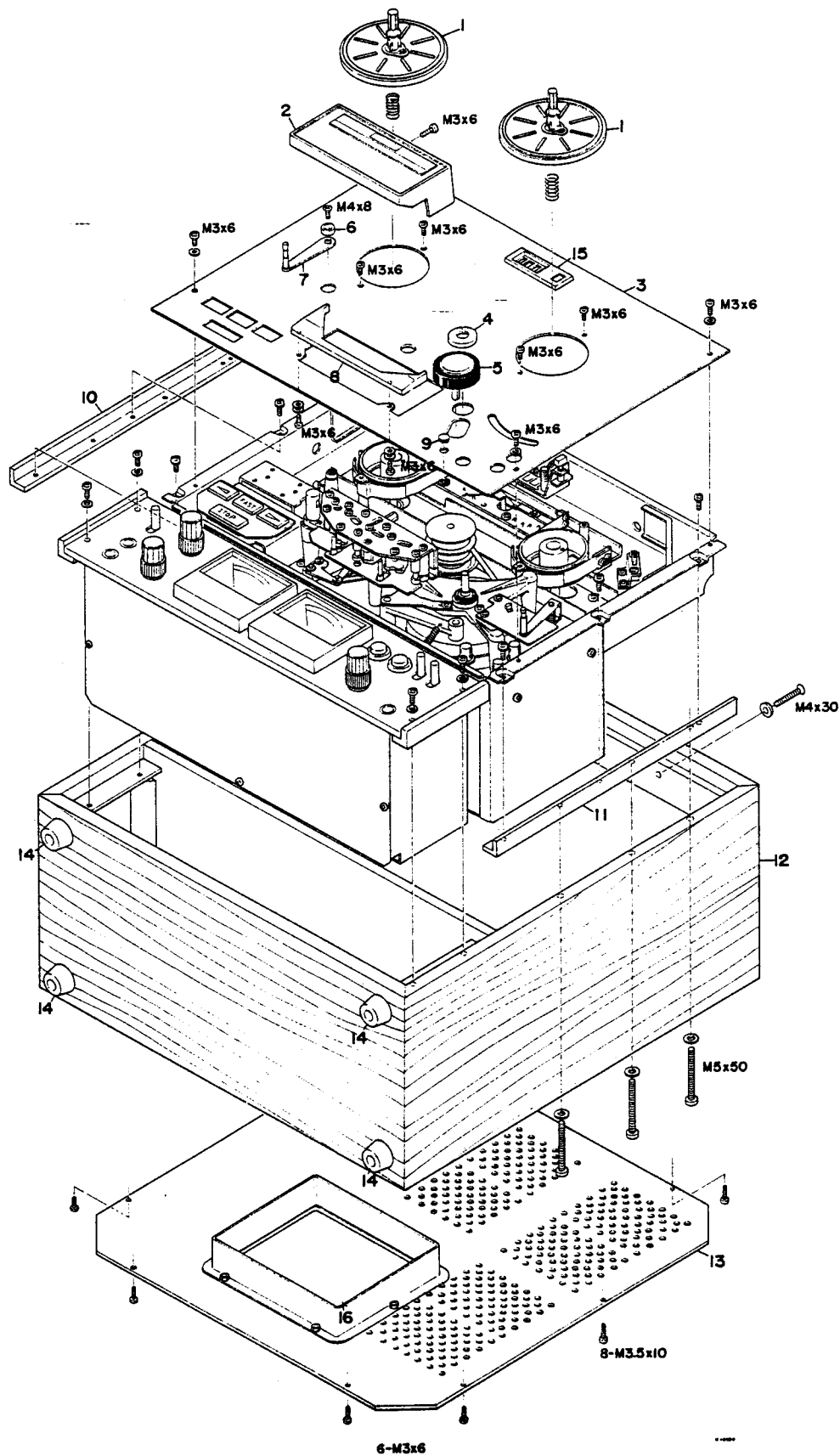
Replacement parts are available through your nearest TEAC dealer or directly from the TEAC office.

Changes are constantly being made to make TEAC products better and more reliable.

Therefore, when ordering parts, always include the following information:

<i>MODEL</i>	<i>SERIAL NO.</i>	<i>REF.NO.</i>	<i>PARTS NO.</i>	<i>DESCRIPTION</i>
--------------	-------------------	----------------	------------------	--------------------

TRIM PARTS



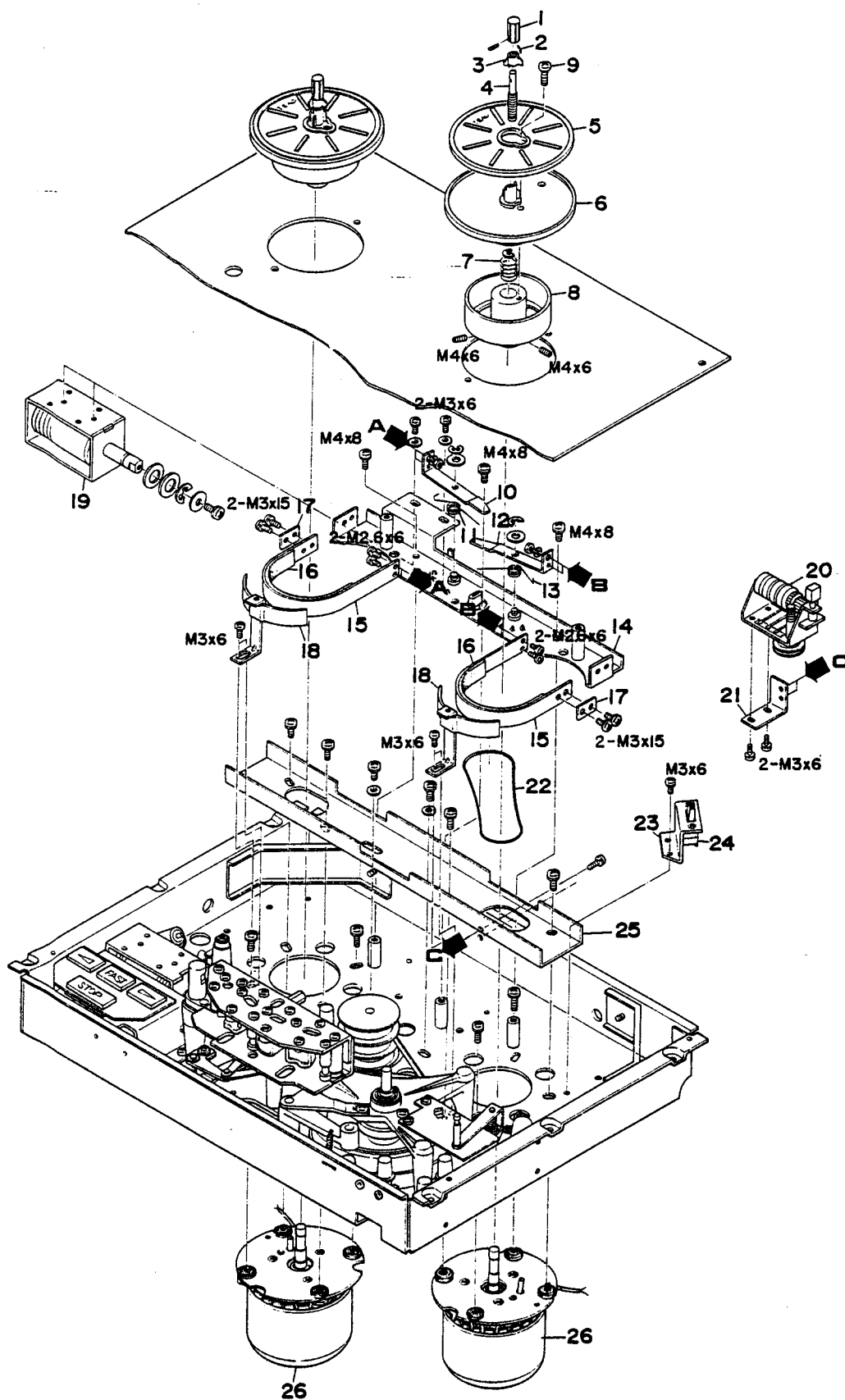
TRIM PARTS

REF. NO.	TEAC PARTS NO.	DESCRIPTION	1st	2nd
1- 1	50160351	Reel Assy		
1- 2	50136510	Head Housing		
	50266340	Name Plate (A-4010GSL)		
	50266350	Name Plate (4010GSL)		
1- 3	50114030	Panel, Dress		
1- 4	50125040	Dust Cap		
1- 5	50140200	Pinch Roller Assy		
1- 6	50277970	Washer		
1- 7	50180400	Tension Arm Guide Assy (Left)		
1- 8	50135260	Cover, Head		
1- 9	50271800	Plastic Reflector		
1-10	50111621	Sash A		
1-11	50111631	Sash B		
1-12	50285936	Case		
1-13	50287841	Back Cover		
1-14	50283830	Rubber Stands		
1-15	50278560	Escutcheon, Counter		
1-16	50287830	Fram, Back Cover		

ABOVE MAIN CHASSIS -1

REF. NO.	TEAC PARTS NO.	DESCRIPTION	1st	2nd
2- 1	50390581	Head Assy		
2- 2	50151420	Push Holder Assy		
2- 3	50151601	Lever Assy, A		
2- 4	50151611	Lever Assy, B		
2- 5	50151900	Lifter Lever Assy		
2- 6	50151932	Arm, Lifter		
2- 7	50152300	Mounting Bracket		
2- 8	50122730	Capstan Base		
	50213090	Screw, Capstan Base 4 ϕ x10		
2- 9	50443850	Switch, Pause		
2-10	50250500	Button		
2-11	50448710	Mounting Bracket		
2-12	50123213	Belt, Capstan		
2-13	50141602	Arm, Roller		
2-14	50141521	Shaft, Roller Arm		
2-15	50220441	Spring		
2-16	50150210	CL Ring Assy		
2-17	50616300	Solenoid		
2-18	50123720	Nut, Solenoid Shaft		
2-19	50221030	Spring, Solenoid Shaft		
2-20	50276270	Washer, Spring		
2-21	50181761	Shaft, Tension Arm		
2-22	50182140	Washer, Thrust		
2-23	50180141	Tension Arm Assy		
2-24	50220343	Spring, Tension Arm		
2-25	50182080	Stop Ring		
2-26	50446180	Switch, Micro		
2-27	50541020	Cap, Oil Tube		
2-28	50271790	Shield Paper		
2-29	50182173	Mounting Bracket		
2-30	50183890	Magnet		
2-31	50182641	Holder, Left Arm		
2-32	50275690	Cushion, Rubber		
2-33	50220990	Spring, Tension (Left)		
2-34	50182620	Arm Stopper		
2-35	50182630	Shaft, Tension Arm (Left)		
2-36	50250421	Control Switch Assy		
2-37	50414131	Lamp, 8V		
2-38	50431140	Socket, Pilot		
2-39	50272480	Lamp Mounting Bracket		
2-40	50443210	Switch, Power		
2-41	50251100	Button, Power		
2-42	50272591	Mounting Bracket, Power SW		
2-43	50112456	Transport Chassis		
2-44	50331930	Stopper, Solenoid		

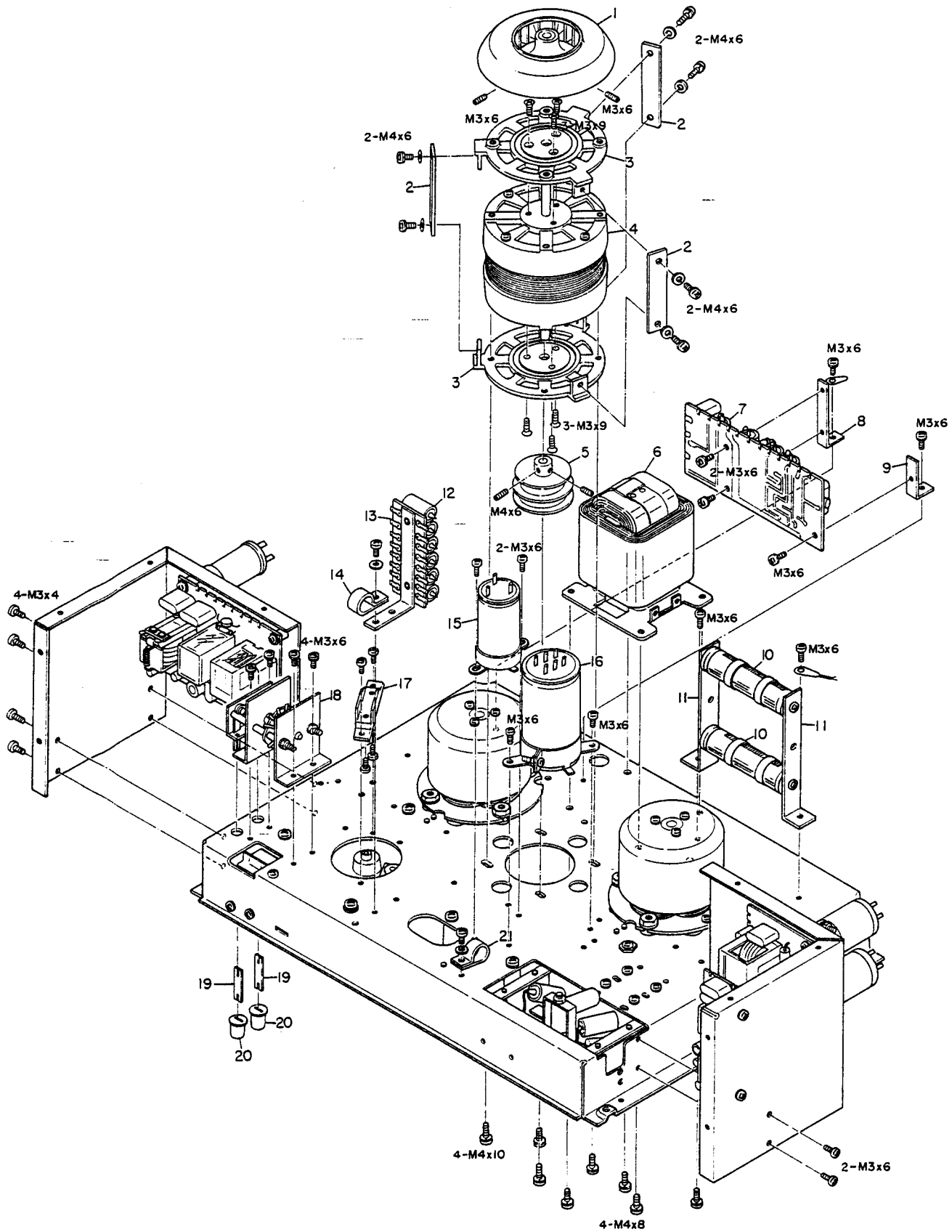
ABOVE MAIN CHASSIS - 2



ABOVE MAIN CHASSIS - 2

REF. NO.	TEAC PARTS NO.	DESCRIPTION	1st	2nd
3- 1	50163321	Knob, Reel Lock, B		
3- 2	50221610	Spring, Slip		
3- 3	50163090	Reel Lock		
3- 4	50163331	Shaft, Reel Lock, B		
3- 5	50163370	Reel Sheet		
3- 6	50163351	Reel Table		
3- 7	50221650	Spring, High Adjust		
3- 8	50163361	Brake Drum		
3- 9	50213610	Screw, High Adjust		
3-10	50172011	Lever, Brake, A		
3-11	50171900	Spring, Brake (Left)		
3-12	50172021	Lever, Brake, B		
3-13	50171890	Spring Brake (Right)		
3-14	50170111	Base, Brake, A		
3-15	50171910	Brake Band		
3-16	50171382	Felt, Brake		
3-17	50171800	Retainer, Brake Band		
3-18	50171723	Brake Guard		
3-19	50616300	Solenoid, Brake		
3-20	50585110	Index Counter		
3-21	50271991	Mounting Bracket, Counter		
3-22	50271420	Belt, Counter		
3-23	50271651	Mounting Bracket		
3-24	50444170	Switch, Slide		
3-25	50116932	Mounting Bracket		
3-26	50702270	Motor, Reel (Left and Right)		

BELOW MAIN CHASSIS



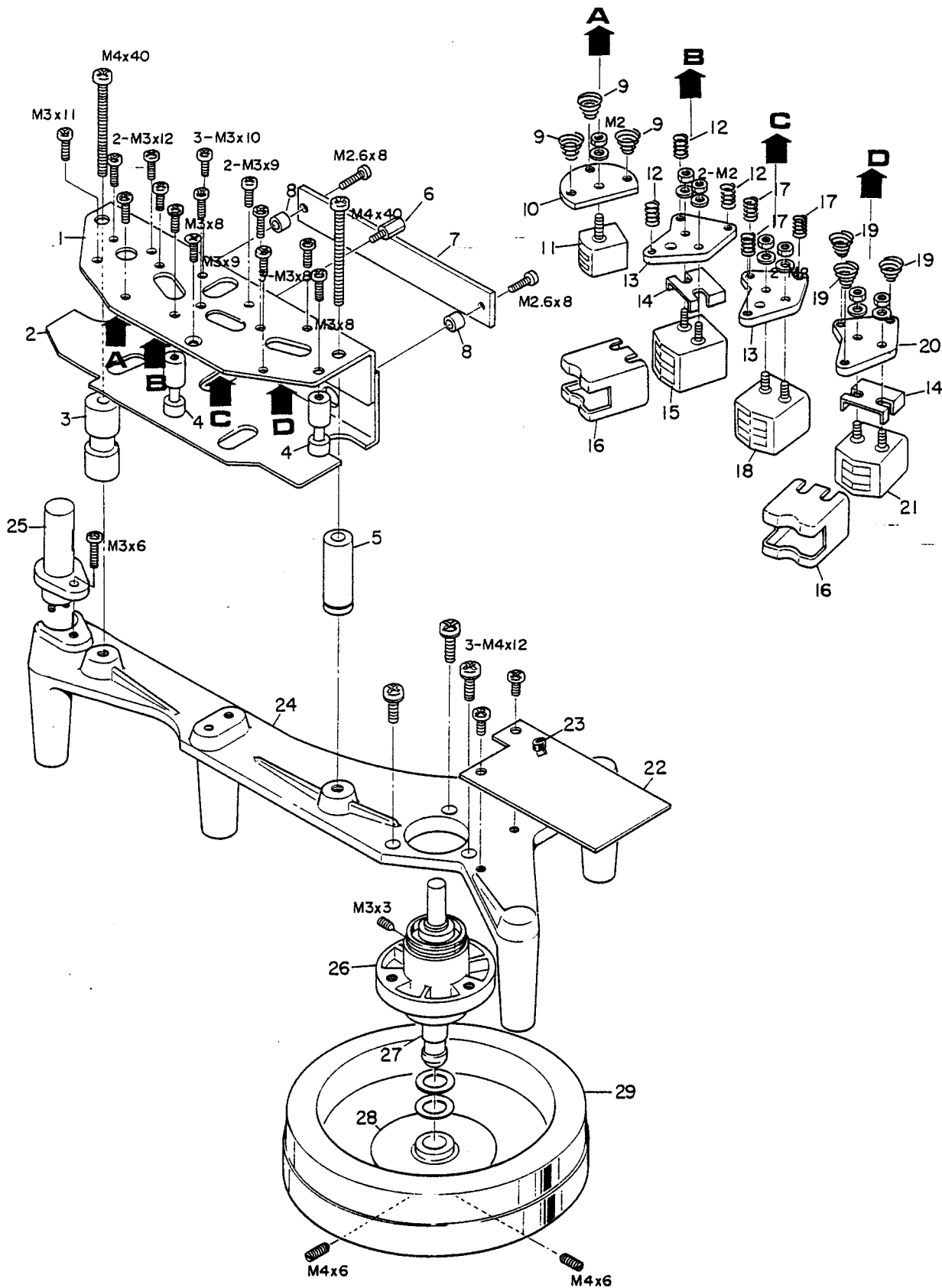
BELOW MAIN CHASSIS

REF. NO.	TEAC PARTS NO.	DESCRIPTION	1st	2nd
4- 1	50123981	Fan, Capstan		
	71021041	Capstan Motor Assy		
4- 2	70710090	Reinforcing Plate		
4- 3	70710060	Rubber Cushion Plate		
4- 4		Capstan Motor		
4- 5	50123793	Pulley, Capstan Motor		
4- 6	50561564	Transformer, Power (100/117/200/220/240 V)		
4- 6	50561830	Transformer, Power (100, 117 V)		
4- 7	50490580	Power Supply PC Board Assy		
4- 8	50230220	PC Mounting Bracket		
4- 9	50230230	PC Mounting Bracket		
4-10	50524162	Wire Wound Resistor		
4-11	50271981	Resistor Mounting Bracket		
4-12	50541020	Cap., Oil Paper 0.1 μ F 400V		
4-13	50453130	Terminal Board 16P		
4-14	50276280	Wire Clamp A		
4-15	50545650	Cap., MP 2 μ F + 0.8 μ F		
4-16	50545480	Cap., MP 3 μ F + 1 μ F		
4-17	50272820	Capstan Thrust Plate		
4-18	50442320	SW, Speed Selector		
4-19	50251600	Lever, Speed Selector		
4-20	50251100	Button		
4-21	50276290	Wire Clamp, B		

BACK PANEL PARTS

REF. NO.	TEAC PARTS NO.	DESCRIPTION	1st	2nd
5- 1	50432520	Dummy Plug		
5- 2	50924500	Fuse Holder (100V only)		
	50412130	Fuse Holder (117V only)		
	50412720	Fuse Holder (100/117/200/220/240V)		
5- 3	50411140	Fuse 2A		
5- 4	50266430	Mounting Plate (100/117/200/220/240V)		
5- 4	50266520	Mounting Plate (100V, 117V)		
5- 5	50454071	GND, Terminal		
5- 6	50233434	Cover, Back		
5- 7	50231616	Face Plate (Right)		
5- 8	50551240	Cap., MP 1000 μ F 35V		
5- 9	50551120	Cap., MP 1000 μ F 160V		
5-10	50490570	Delay Relay PC Board Assy		
5-11	50233440	Mounting Bracket		
5-12	50481590	Head Change PC Board Assy		
5-13	50432350	Socket 11P		
5-14	50431050	AC Socket		
5-15	50419010	Plate, Fuse Post		
5-16	50236780	Face Plate (Left)		
5-17	50490580	Power Transformer PC Board Assy		
5-18	50230220	Mounting Bracket		
5-19	50488660	Reverse Relay PC Board Assy		
5-20	50551120	Cap., MP 100 μ F 150V		

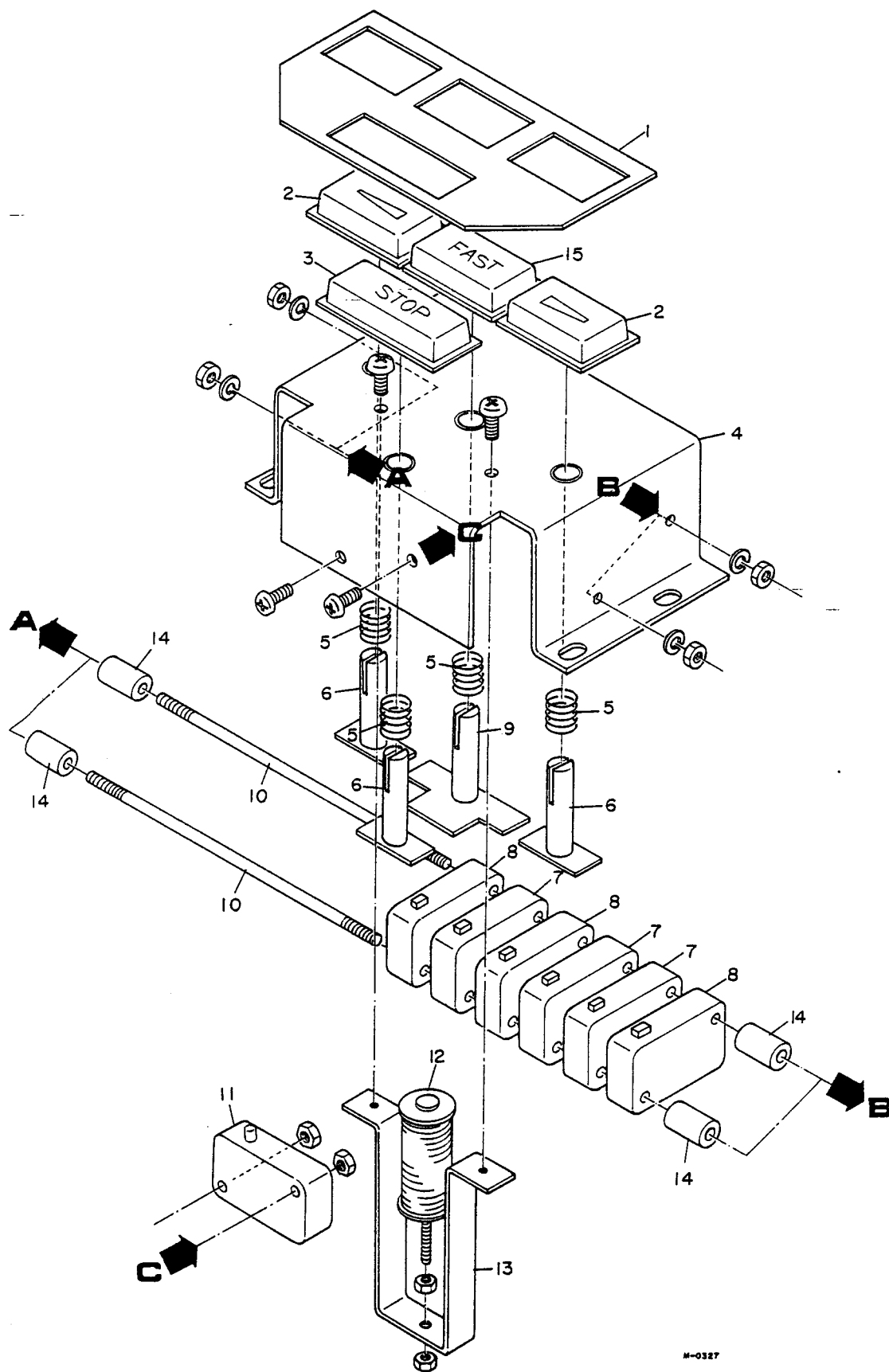
HEADS AND CAPSTAN



HEADS AND CAPSTAN

REF. NO.	TEAC PARTS NO.	DESCRIPTION	1st	2nd
6- 1	50135280	Head Base Plate		
6- 2	50133691	Shield Plate, Head		
6- 3	50133351	Tape Guide, B		
6- 4	50133342	Tape Guide, A		
6- 5	50134290	Shaft, Head Housing		
6- 6	50135250	Boss, Head Housing		
6- 7	50480311	Head Terminal		
6- 8	50240390	Stand Off		
6- 9	50220200	Spring, Mount Plate, D		
6-10	50133601	Mount Plate, Erase Head		
6-11	50663030	Head, Erase		
6-12	50220452	Spring, Playback Head		
6-13	50133591	Mount Plate, Record Head		
6-14	50675320	Spacer, Head		
6-15	50667300	Head, Playback (Ferrite)		
6-16	50675650	Case, Shield, A		
6-17	50220420	Spring, Record Head		
6-18	50667210	Head, Record (Ferrite)		
6-19	50220541	Spring, Playback Head		
6-20	50133580	Mount Plate, Playback Head		
6-21	50667310	Head, Playback		
6-22	50182270	Cover, Tension Arm		
6-23	50182152	Cushion, Tension Arm		
6-24	50122731	Capstan Base		
6-25	50449640	Sensing Assy		
	50120371	Capstan Assy		
6-26	50122641	Metal Holder Assy		
6-27	50125022	Shaft, Capstan Holder		
6-28	50122550	Felt Pad		
6-29	50122665	Flywheel		

CONTROL BUTTON ASSY

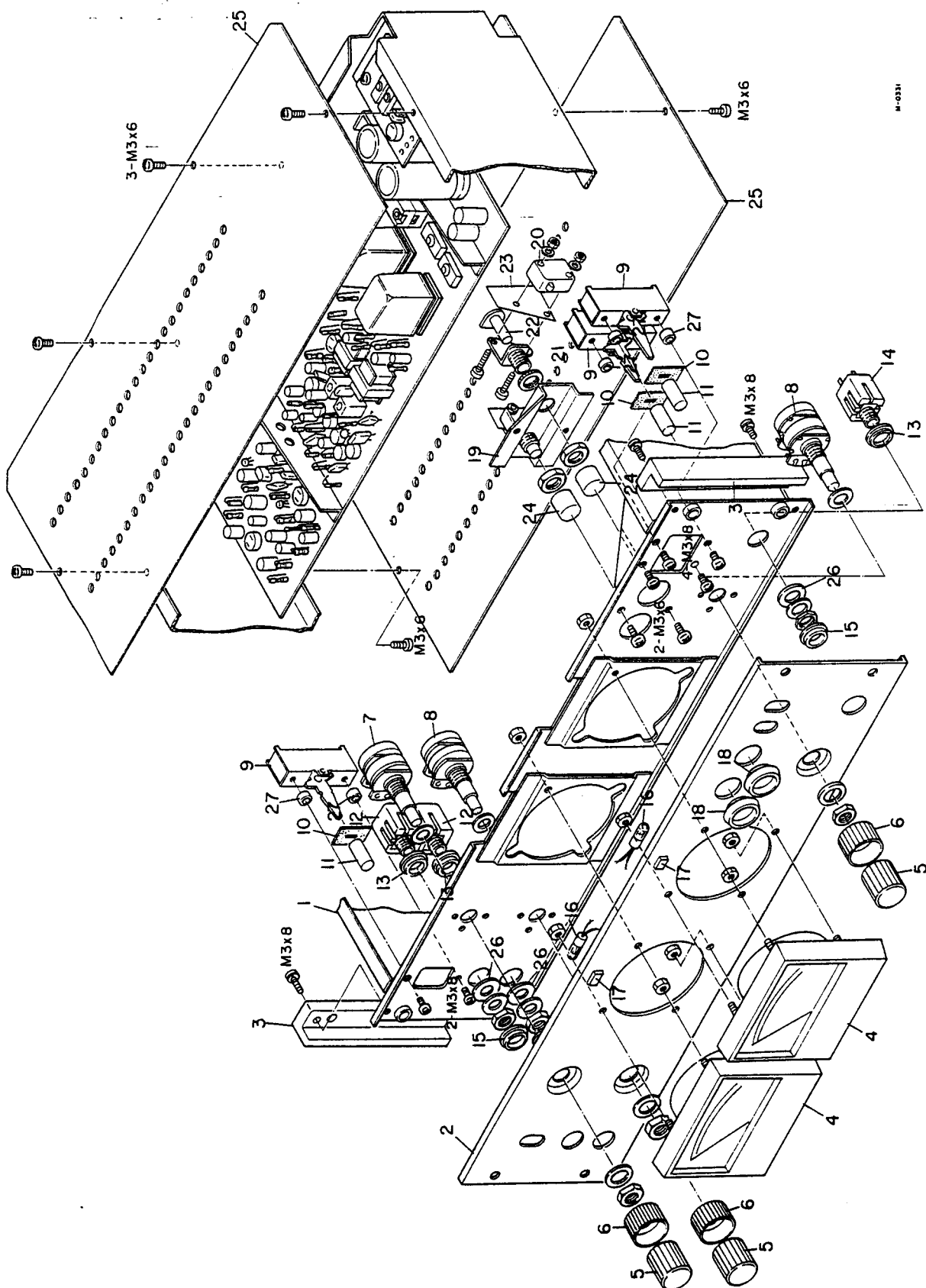


CONTROL BUTTON ASSY

REF. NO.	TEAC PARTS NO.	DESCRIPTION	1st	2nd
7- 1	50271862	Rubber Face Plate		
7- 2	50253210	Button, Reverse		
7- 3	50253180	Button, Stop		
7- 4	50272561	Switch Mounting Chassis		
7- 5	50220840	Spring		
7- 6	50449430	Push Plate Assy		
7- 7	50446130	Switch, Micro V-1A44		
7- 8	50446101	Switch, Micro V-1A10		
7- 9	50449450	Push Plate Assy		
7-10	50210060	Shaft, M3 x95		
7-11	50446140	Switch, Micro VV-5-1A		
7-12	50616180	US Solenoid		
7-13	50449321	Solenoid Mounting Bracket		
7-14		Spacer		
7-15	50253190	Button, Fast		

PREAMPLIFIER CHASSIS

(FRONT)



PREAMPLIFIER CHASSIS

(FRONT)

REF. NO.	TEAC PARTS NO.	DESCRIPTION	1st	2nd
8- 1	50234633	Ampl. Chassis Assy		
8- 2	50114040	Face Panel		
8- 3	50231862	Sash		
8- 4	50581390	VU Meter		
8- 5	50253420	Knob, A		
8- 6	50243431	Knob, B		
8- 7	50537170	Double Potentiometer		
8- 8	50537160	Double Potentiometer		
8- 9	50937580	Switch, Lever		
8-10	50937220	Sheet, Lever Knob		
8-11	50253440	Knob, Switch		
8-12	50430230	Jack, 1P		
8-13	50272620	Washer, B		
8-14	50432440	Jack, 3P		
8-15	50272610	Washer, A		
8-16	50414310	Record Lamp 6V 50mA		
8-17	50414240	Plastic Reflector		
8-18	50253450	Button Housing REC		
8-19	50279240	Mounting Plate, Micro Switch		
8-20	50446080	Switch, Micro (Enclosed		
8-21		Ref.No. 8-21,8-22,8-23,8-24)		
8-22				
8-23				
8-24				
8-25	50231792	Cover, Chassis		
8-26	50230560	Washer, Fiver		
8-27	50241700	Stand Off		

(REAR)

PREAMPLIFIER CHASSIS

(REAR)

REF. NO.	TEAC PARTS NO.	DESCRIPTION	1st	2nd
9- 1	50234633	Ampl. Chassis Assy		
9- 2	50266410	Name Plate		
9- 3	50434632	Dual Pin Jack Assy		
9- 4	50452060	Terminal Strip 1L-2P		
9- 5	50430010	Connector, DIN		
9- 6	50233530	DIN Connector Holder		
9- 7	50232811	Mounting Bracket		
9- 8	50233500	PC Mounting Block		
9- 9	50490560	PC Board Assy		
9-10	50272870	PC Mounting Bracket		
9-11	50432100	Connector, 7P		
9-12	50436190	Socket, 11P		
9-13	50489041	Bias PC Board Assy		
9-14	50233800	Mounting Bracket		
9-15	50488540	Bias Oscillator Assy		

PRINTED CIRCUIT BOARD AND PARTS LIST

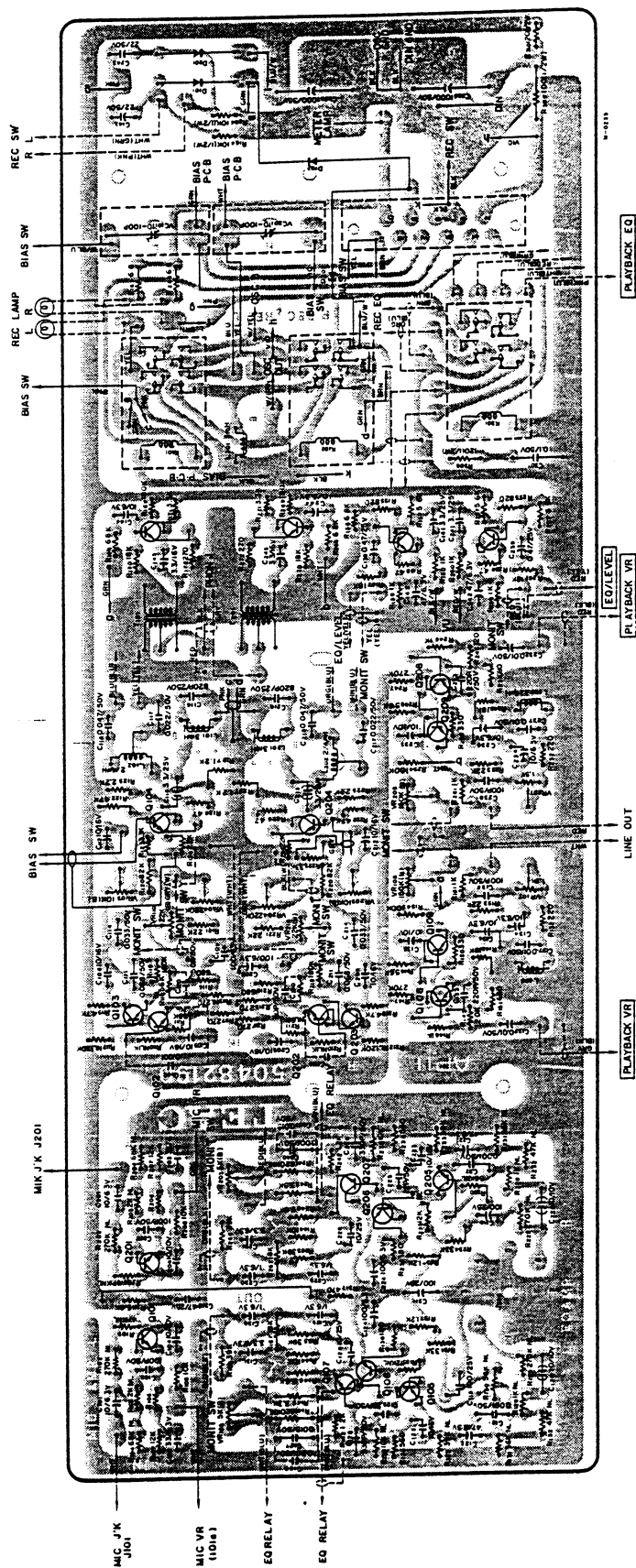
A-4010GSL

REPLACEMENT INFORMATION

Replacement parts are available through your nearest TEAC dealer or directly from the TEAC office. Changes are constantly being made to make TEAC products better and more reliable. Therefore, when ordering parts, always include the following information:

<i>MODEL</i>	<i>SERIAL NO.</i>	<i>REF.NO.</i>	<i>PARTS NO.</i>	<i>DESCRIPTION</i>
--------------	-------------------	----------------	------------------	--------------------

PREAMPLIFIER



PREAMPLIFIER

CIRCUIT REF.NO.	TEAC PARTS NO.	DESCRIPTION	1st	2nd
	50490560	PC Board Assy, Preamplifier		
		SILICON TRANSISTORS		
Q101/201	50423660	2SC732-BL (or 2SC367-BL)		
Q102/202	50423660	2SC732-BL (or 2SC367-BL)		
Q103/203	50423510	2SC733-Y		
Q104/204	50423510	2SC733-Y		
Q105/205	50423660	2SC732-BL		
Q106/206	50423650	2SA494-Y		
Q107/207	50423510	2SC733-Y		
Q108/208	50423660	2SC727-BL (or 2SC369-BL)		
Q109/209	50423510	2SC733-Y		
Q110/210	50423510	2SC733-Y		
Q111/211	50423510	2SC733-Y		
		SILICON DIODES		
D101/201	50442570	SIB01-06 (or FR2-06)		
D102/202	50442570	SIB01-06 (or FR2-06)		
		CARBON RESISTORS		
ALL RESISTORS IN OHMS 5% TOLERANCE, 1/4 WATT AND CARBON TYPE UNLESS OTHERWISE NOTED.				
R101/201*	50518230	NL 2.2k		
R102/202	50519790	NL 270k		
R103/203	50518230	NL 2.2k		
R104/204	50519780	NL 68k		
R105/205	50519810	NL 47k		
R106/206	50515240	NL 150		
R107/207	50515500	12k		
R108/208	50515490	10k		
R109/209	50515660	150k		
R110/210	50519960	NL 1k		
R111/211	50519780	NL 68k		
R112/212	50519850	NL 120k		
R113/213	50519840	NL 270		
R114/214	50515610	NL 56k		
R115/215	50515440	4.7k		
R116/216	50515320	680		
R117/217	50515270	270		
R118/218	50515670	180k		
R120/220	50515630	82k		
R121/221	50515540	22k		
R122/222	50515590	47k		
R123/223	50515410	3.3k		

PARTS LIST

A-4010GSL

PREAMPLIFIER (CONTINUED)

CIRCUIT REF.NO.	TEAC PARTS NO.	DESCRIPTION	1st	2nd
R124/224	50515540	22k		
R125/225	50515280	2.2k		
R126/226	50515170	47		
R127/227	50515350	NL 1.2k		
R128/228	50519960	NL 1k		
R129/229	50519790	NL 270k		
R130/230	50518240	NL 56k		
R131/231	50518240	NL 56k		
R132/232	50519810	NL 47k		
R133/233	50518250	NL 39k		
R134/234	50515570	33k		
R135/235	50518260	NL 12k		
R136/236	50515310	560		
R137/237	50515350	1.2k		
R138/238	50518270	NL 180		
R139/239	50519820	NL 10k		
R140/240	50515460	5.6k		
R141/241	50518280	NL 820k		
R142/242	50515350	1.2k		
R143/243	50515410	3.3k		
R144/244	50515490	10k		
R145/245	50515650	120k		
R146/246	50515340	1k		
R147/247	50515700	270k		
R148/248	50515520	18k		
R149/249	50515460	5.6k		
R150/250	50515280	330		
R151/251	50515320	680		
R152/252		220		
R153/253	50515540	22k		
R154/254	50515620	68k		
R155/255	50515770	820k		
R156/256	50515700	270k		
R157/257	50515460	5.6k		
R158/258	50515170	47		
R159/259	50515340	1k		
R160/260	50515340	1k		
R161/261	50515340	1k		
R162/262*	50515520	18k		
R163/263	50515070	6.8		
R164/264	50516490	10k 1/2W		
R165/265	50515580	39k		
R166/266	50515580	39k		
R167/267	50515520	18k		
R168/268	50515490	10k		
R169/269	50515670	180k		
R170/270	50515520	18k		
R171/271	50515410	3.3k		
R172/272	50515270	270		

PREAMPLIFIER (CONTINUED)

CIRCUIT REF.NO.	TEAC PARTS NO.	DESCRIPTION	1st	2nd
R308	50516230	120 1/2W		
R309	50516220	100 1/2W		
R310	50516230	120 1/2W		
R311	50515470	6.8k		
R312	50515360	470		
CAPACITORS				
ALL CAPACITORS IN MICRO FARADS UNLESS OTHERWISE NOTED.				
C101/201	50554050	Elec. 10 16V		
C102/202	50543400	Polyst. 100pF 50V		
C103/203	50554240	Elec. 33 6.3V		
C104/204	50554050	Elec. 10 16V		
C105/205	50554050	Elec. 10 16V		
C108/208	50554050	Elec. 10 16V		
C109/209	50554230	Elec. 100 6.3V		
C110/210	50543410	Polyst. 50pF 50V		
C111/211	50548540	Mylar 0.068 50V		
C112/212	50554050	Elec. 10 16V		
C114/214	50548240	Mylar 0.033 50V		
C115/215	50546030	Aluminum 3.3 25V		
C116/216	50543120	Polyst. 820pF 250V		
C117/217	50548290	Mylar 0.022 50V		
C118/218	50548270	Mylar 0.047 50V		
C119/219	50554170	Elec. 100 25V		
C120/220	50546190	Elec. 10 10V		
C121/221	50548320	Mylar 0.001 50V		
C122/222	50554030	Elec. 47 6.3V		
C123/223	50554050	Elec. 10 16V		
C124/224	50554230	Elec. 100 6.3V		
C125/225	50543330	Polyst. 22pF 50V		
C126/226	50543340	Polyst. 330pF 50V		
C127/227	50548420	Mylar 0.015 50V		
C128/228	50554510	Elec. 10 35V		
C129/229	50554670	Elec. 1 25V		
C130/230	50554670	Elec. 1 25V		
C131/231	50554220	Elec. 3.3 25V		
C132/232	50554050	Elec. 10 16V		
C133/233	50543420	Polyst. 220pF 50V		
C134/234	50554050	Elec. 10 16V		
C135/235	50554050	Elec. 10 16V		
C136/236	50554050	Elec. 10 16V		
C137/237	50548020	Mylar 0.01 50V		
C138/238	50543400	Polyst. 100pF 50V		
C139/239	50554680	Elec. 0.47 25V		
C140/240	50548320	Mylar 0.001 50V		
C141/241	50554220	Elec. 3.3 25V		

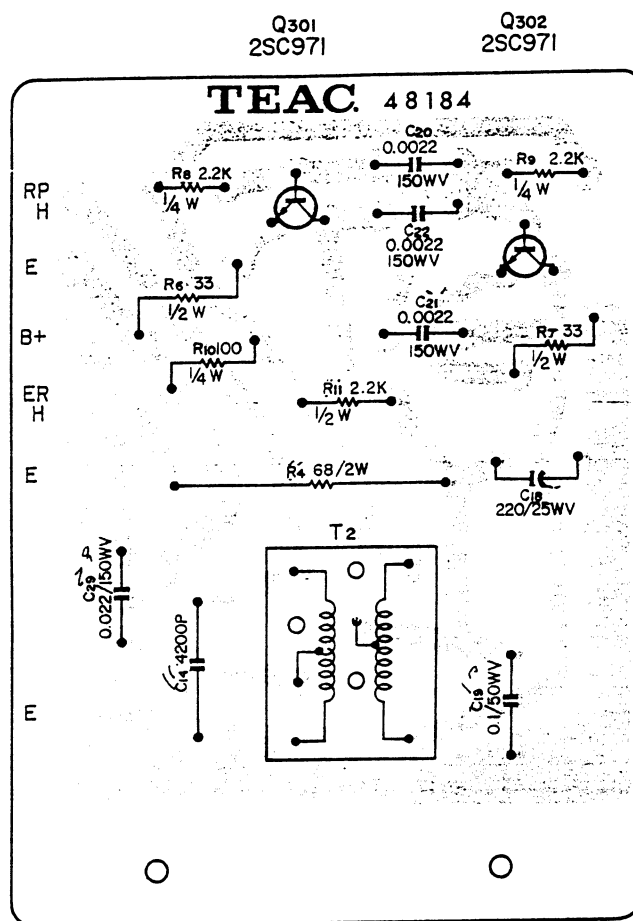
PARTS LIST

A-4010GSL

PREAMPLIFIER (CONTINUED)

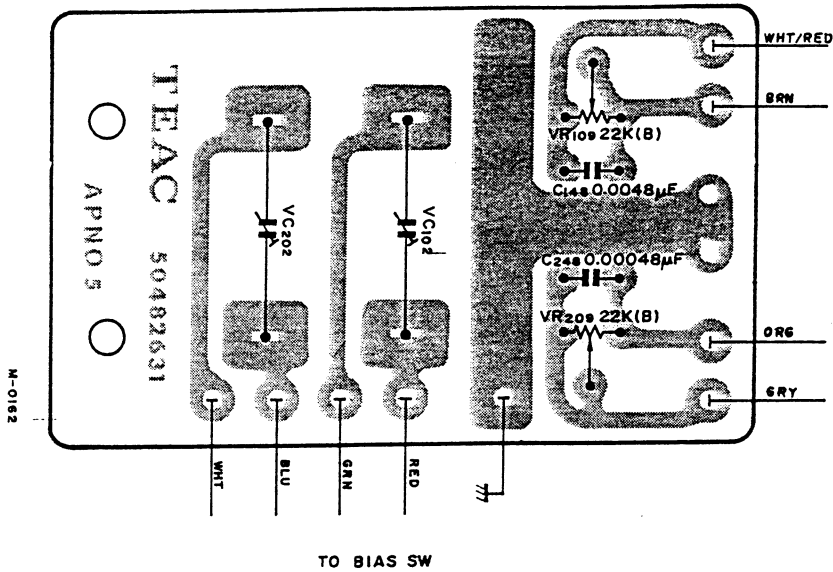
CIRCUIT REF.NO.	TEAC PARTS NO.	DESCRIPTION	1st	2nd
C142/242	50554030	Elec. 47 6.3V		
C143/243	50554710	Elec. 22 50V		
C144/244	50554050	Elec. 10 16V		
C145/245	50554260	Elec. 33 16V		
C146/246	50548320	Mylar 0.001 50V		
C147/247	50548450	Mylar 0.0022 50V		
C148/248*	50548130	Mylar 0.0047 50V		
C308	50554740	Elec. 1000 35V		
C309	50554740	Elec. 1000 35V		
C310	50554020	Elec. 47 25V		
C311	50554170	Elec. 100 25V		
C312	50548040	Mylar 0.1 50V		
ADJUSTABLE COMPONENTS				
VC101/201	50547040	Trimmer Cap., 10p~100pF		
VR103/203	50533480	Trimmer Resistor 10k Ω B 10 ϕ		
VR104/204	50533570	Trimmer Resistor 220k Ω B 10 ϕ		
VR105/205	50533460	Trimmer Resistor 4.7k Ω B 10 ϕ		
VR107/207	50533450	Trimmer Resistor 1.5k Ω B 10 ϕ		
VR108/208	50533470	Trimmer Resistor 150k Ω B 10 ϕ		
VR109/209*	50533560	Trimmer Resistor 22k Ω B 10 ϕ		
VR110/210	50533560	Trimmer Resistor 22k Ω B 10 ϕ		
COILS				
L101/201	50566120	Choke 3mH		
L102/202	50566101	Rec. EQ 2.4/4.2mH		
L103/203	50566110	Choke 220 μ H		
L301	50566120	Choke 3mH		
MISCELLANEOUS				
P301	50438120	PC Board Receptacle 11P		
J305	50434670	PC Board Socket 7P (with Holding Clip)		
	50429060	Holder		
K101	50610520	4T Relay (with Holding Clip)		
K201	50610520	4T Relay (with Holding Clip)		
K301	50610520	4T Relay (with Holding Clip)		
T101/201	50562140	Headphone Transformer (or 50562150) 3k Ω /8 Ω , 16 Ω		

BIAS OSCILLATOR



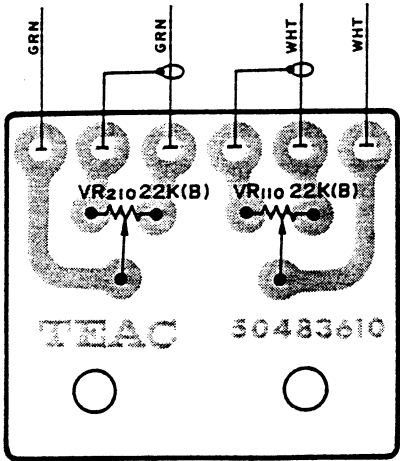
CIRCUIT REF.NO.	PARTS NO.	DESCRIPTION	1st	2nd
	50488540	PC Board Assy, Bias Osc.		
T301	50563120	Coil, Oscillator		
Q301-302	50423880	Power Transistor 2SC-971		
C301	50554180	Electrolytic 220μF 25V		
C302	50548040	Mylar 0.1μF 50V		
C303	50548210	Mylar 0.0022μF 150V		
C304-305	50548210	Mylar 0.0022μF 150V		
C306	50544040	Mica 4200pF 250V		
C307	50548740	Mylar 0.022μF 150V		
R301	50516380	Carbon 2.2kΩ 1/2W 10%		
R302	50515220	Carbon 100Ω 1/4W 10%		
R303-304	50516380	Carbon 2.2kΩ 1/4W 10%		
R305-306	50516150	Carbon 33Ω 1/2W 10%		
R307	50525880	Metal Oxide 68Ω 2W		

BIAS ADJUST ASSY



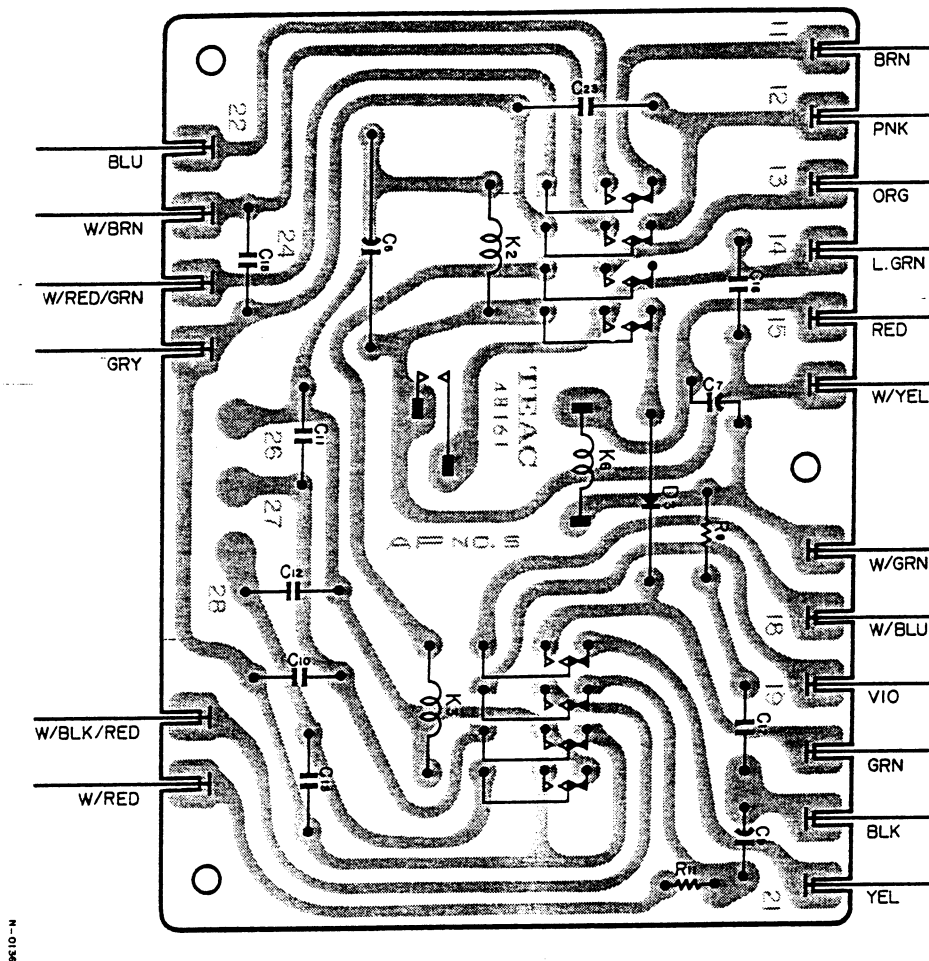
CIRCUIT REF.NO.	TEAC PARTS NO.	DESCRIPTION	1st	2nd
	50482632	PC Board Assy		
VC102/202	50547040	Trimmer Capacitor 10~100pF		
VR109/209	50533560	Trimmer Resistor 22kΩ B 10φ		
C148/248	50548130	Mylar 0.0047μF 50V		

TRIMMER RESISTOR
(SOURCE LEVEL ADJ)



CIRCUIT REF.NO.	TEAC PARTS NO.	DESCRIPTION	1st	2nd
	50483610	PC Board		
VR110/210	50533560	Trimmer Resistor 10φ 22kΩ B		

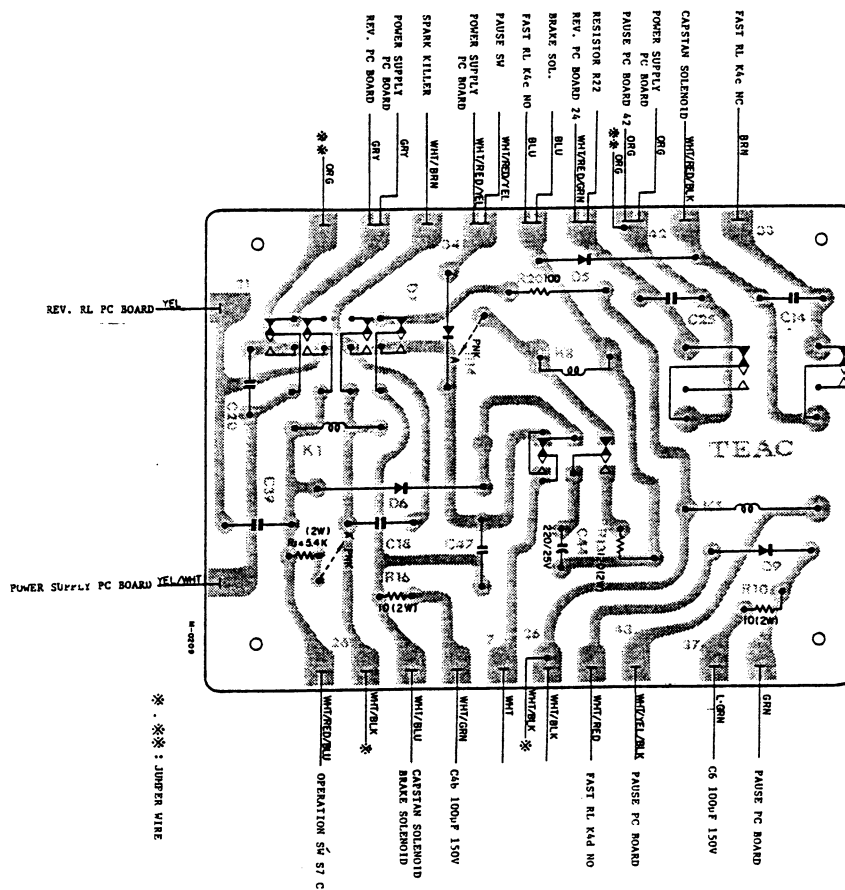
REVERSE RELAYS



CIRCUIT REF.NO.	TEAC PARTS NO.	DESCRIPTION	1st	2nd
	50488660	PC Board Assy, Reverse RL		
K2.3	50610730	Relay, 4T DC 100V		
K6	50610280	Relay, 1M 100E02M		
C5	50555210	Electrolytic 22 μ F 160V		
C7-9	50554510	Electrolytic 10 μ F 35V		
C10-11-12 13-16-23-25	50548390	Metallized Mylar 0.1 μ F 400V		
C17	50548060	Mylar 0.1 μ F 250V (M)		
R9	50516220	Carbon 100 Ω 1/2W SR		
R11	50525600	Wire Wound 22 Ω 1W		
D3	50442570	Diode, SIB01-06 (or 50422360 FR2-06)		

CIRCUIT REF.NO.	TEAC PARTS NO.	DESCRIPTION	1st	2nd
	50490580	PC Board Assy, Power Supply		
D1	50422220	Silicon Stack SIB02-BOI		
D2	50442570	Diode SIB01-06 (or FR2-06)		
C2·3	50555150	Electrolytic 470μF 35V		
C38	50541020	Oil Paper 0.1μF 400V		
C40	50548060	Mylar 0.1μF 250V		
C45		Electrolytic 330μF 50V		
R1·2	50525400	Wire Wound 3.3Ω 2WR		
R3	50525590	Wire Wound 47Ω 2WR		
R4	50525050	Wire Wound 1kΩ 2W (or 50525390)		
R15	50525840	Wire Wound 24Ω 5W		
R21·22	50412300	Fuse Resistor 0.9Ω		

OPERATING AND DELAY RELAYS

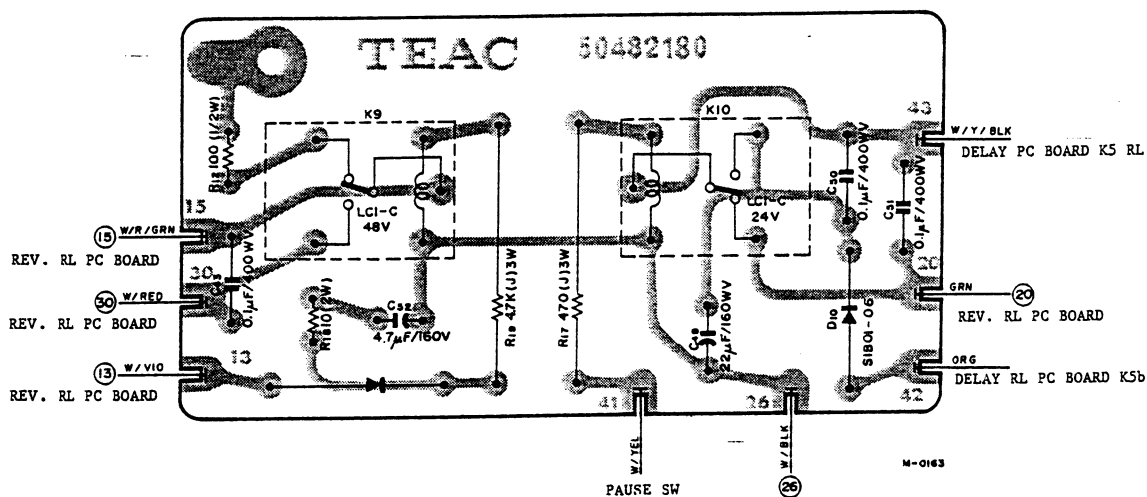


CIRCUIT REF.NO.	TEAC PARTS NO.	DESCRIPTION	1st	2nd
	50490570	PC Board Assy		
K1	50610620	Relay 4T 100V (or 50610730)		
K5	50610631	Relay 2T 100V (or 50610710)		
K8	50610790	Relay 2TMH2P 24V		
R10	50525580	Wire Wound 10Ω 2WR		
R13	50525380	Wire Wound 120Ω 2WR		
R14	50525730	Metal Oxide Film 5.4kΩ 2WP		
R16	50525580	Wire Wound 10Ω 2W L		
R20	50516220	Carbon Film 100Ω 1/2W(K)		
C18~20	50549920	Metallized Mylar 0.1μF 400V		
C25~39	50549920	Metallized Mylar 0.1μF 400V		
C44	50554180	Electrolytic 220μF 25V		
D5~7	50442570	Diode SIB01-06 (or FR2-06)		
D9	50442570	Diode SIB01-06 (or FR2-06)		

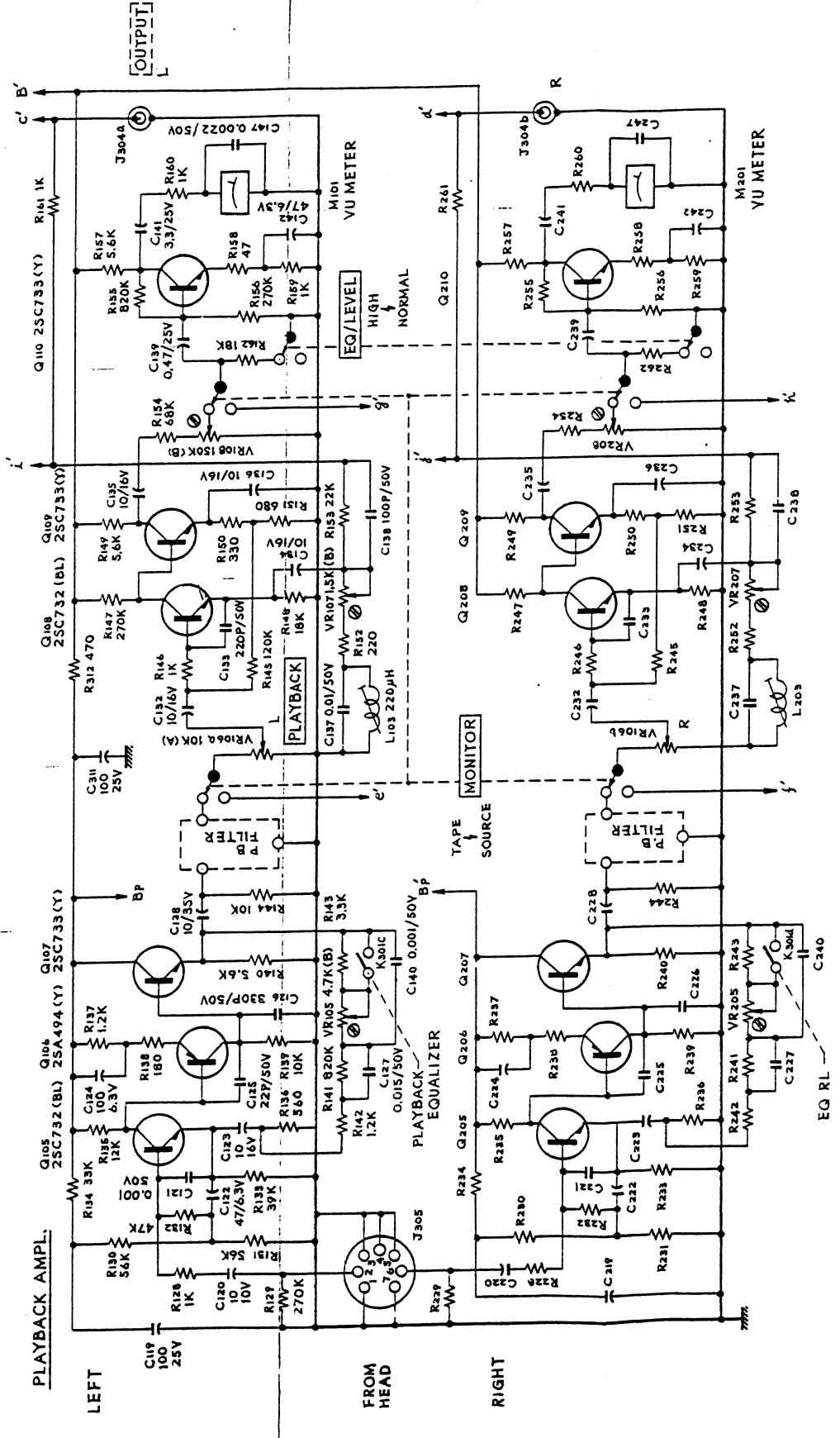
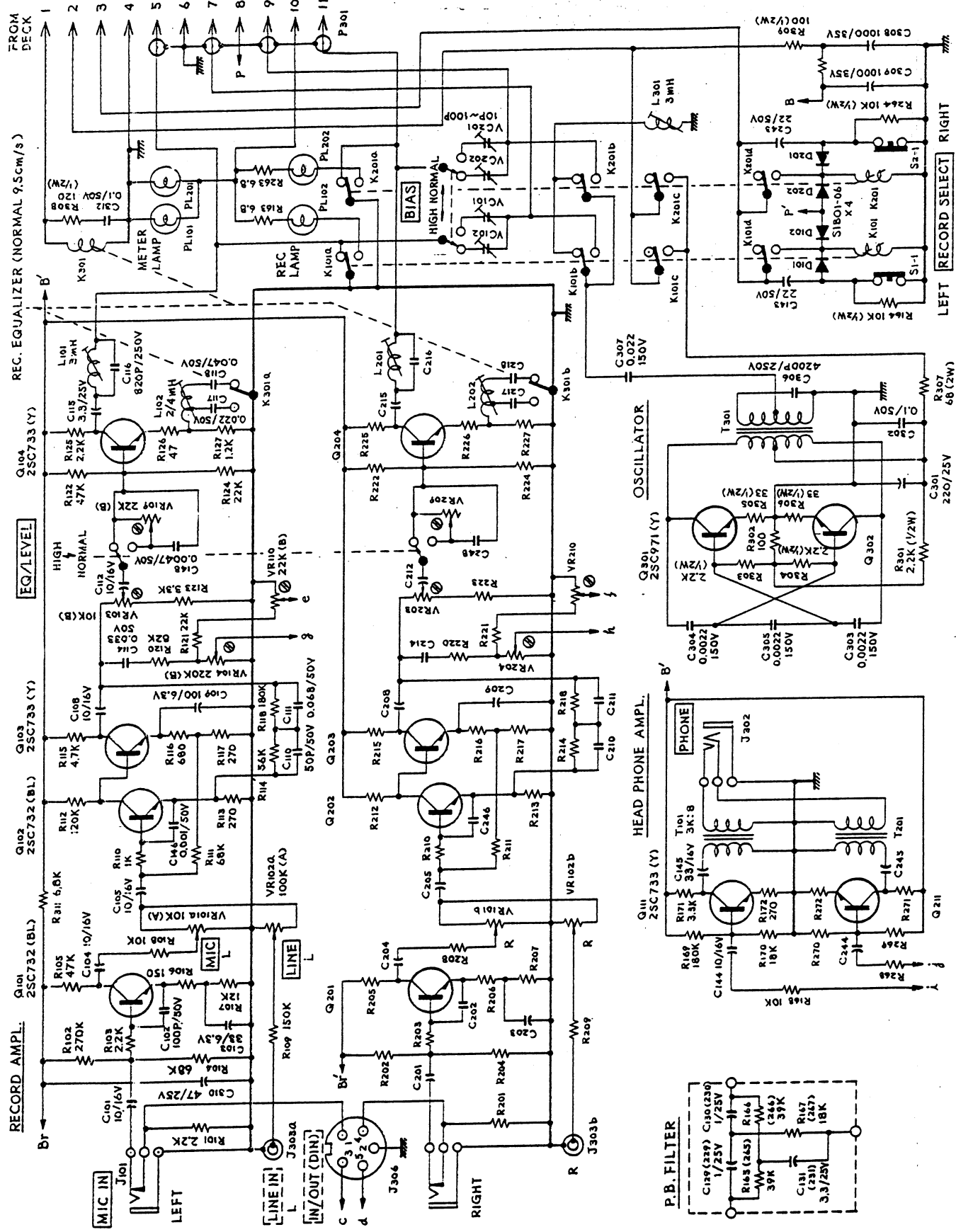
PC BOARD & PARTS LIST

A-4010GSL

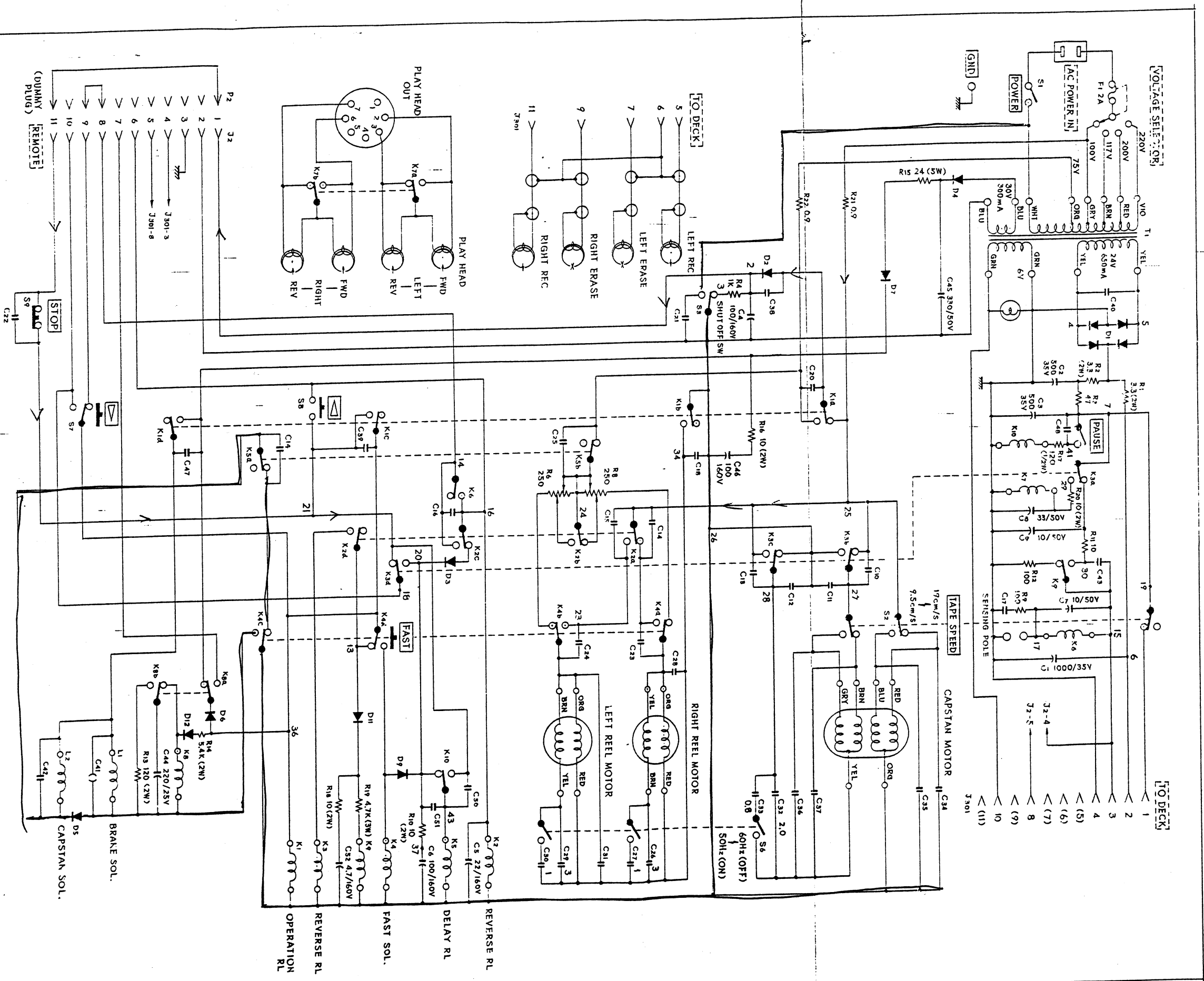
PAUSE



CIRCUIT REF.NO.	TEAC PARTS NO.	DESCRIPTION	1st	2nd
	50490300	PC Board Assy, Pause		
K9	50611110	Miniature Relay LC1-C 48V		
K10	50610800	Miniature Relay LC1-C 24V		
C43-50-51	50548~90	Metallized Mylar 0.1µF 400V		
C49	50555030	Electrolytic 22µF 160V		
C52	50554000	Electrolytic 47µF 160V		
D10-11	50442570	Diode SIB01-06		
R12	50516220	Carbon Film 100Ω 1/2W		
R17	50527140	Metal Oxide Film 470Ω 3W		
	50514330	Carbon 220Ω 1/2W		
R18	50525580	Wire Wound 10Ω 2W		
R19	50527150	Metal Oxide Film 4.7kΩ 3W		



STEREO TAPE DECK			
RECORD/PLAYBACK AMPLIFIER			
MODEL NO.		SHEET NO.	
A-4010GSL		1	
TEAC CORPORATION		A.0101	
REVISION	DATE	CHANGE NO.	
1	5-72		



STEREO TAPE DECK TAPE TRANSPORT			
MODEL NO. A-4010GSL			
SHEET NO.			
REVISION	DATE	CHANGE NO.	
1	5-72		
2			
3			
4			
5			
6			